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by

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ABSTRACT

The history of the Ford Motor Company pertaining to the Edsel is reviewed in comparison to a theory of the firm, which suggests a utility maximization vice the classical profit maximization concept. The conclusion is reached and tends to support the utility maximization concept. Additionally, the conclusion is reached that the utility maximization concept is useful only in providing insight in particular cases.

TABLE OF CONTENTS

CHAPTER I

STATEMENT OF THE PROBLEM

I. THEORETICAL BACKGROUND

In 1963, Oliver E. Williamson's doctoral dissertation on the subject of managerial objectives in a theory of the firm was given a Ford Foundation award[1] and published by Prentice-Hall. In this dissertation, Williamson proposes to answer the following questions:

(1) What are the primary motives of management?

(2) Can these be provided with operational significance?

(3) Can such a translation of managerial objectives be introduced into a theory of the firm from which meaningful theories can be derived?

(4) How do differences in competition in the product market, in managerial tastes, and in the diffusion of stockholders influence the allocation of resources within the firm?

(5) What is the evidence that discretion has a significant and systematic impact on business behavior?[2]

[1]Oliver Williamson, The Economics of Discretionary Behavior: Managerial Objectives in a Theory of the Firm (Englewood, N. J.: Prentice-Hall, Inc., 1964).

[2]Ibid., p. 1-2.

In this chapter, Williamson's argument will be described from a neutral view. The purpose is to explain or summarize his argument.

His argument has as its base the following concepts. There is general agreement that within the domain of perfect competition (broadly conceived), the classical theory of the firm is an exceptionally appropriate and accurate description of behavior. It is not always appreciated, however, that this theory achieves its power due to the constraints on the "opportunity set" of choices open to the firm under these circumstances, rather than because of the inherent accuracy of its behavioral assumptions. Where competitors are numerous and entry is easy, persistent departures from profit maximizing behavior lead inevitably to extinction. Economic natural selection holds the stage. Economists then can confidently predict industry behavior without being explicitly concerned with the behavior of individual units.[3]

When the conditions of competition are relaxed, the opportunity set of the firm is expanded. In this case, the behavior of the firm as a distinct operating unit is of separate

[3] Ibid., p. 2.

interest, both for purposes of interpreting particular behavior within the firm and in the industry aggregate.[4]

He points out, that if economists are to inquire into the processes by which firms are operated the following propositions from organization theory must be considered:

(1) Behavior is responsive to perceived, rather than hypothetical, rewards.

(2) Personal goals influence organizational participation.

(3) Organizational slack is absorbed by knowledgeable and active participants.

(4) Organizational viability requires a value consensus and, hence, precludes arbitrary assignment of goals.

(5) Individuals achieve an economy of effort by selective pursuit of goals in accordance with the capacity of the environment to produce satisfaction.[5]

In the case of profit maximization, Williamson argues that it appears that the superiority of the assumption depends on additional assumptions which are not correct in all cases, for:

(1) Profit is not obviously identical with utility (personal goals).

[4] Ibid., p. 4.

[5] Ibid., pp. 6-8.

(2) Economic natural selection does not necessarily apply in the monopoly sector.

(3) The transfer of monopoly ownership through transactions in the capital market is not in all cases likely to be effective in changing managerial control.[6]

On the basis of these arguments he finds that the appropriate behavioral assumption may not be one of profit maximization, and recourse to a different line of investigation is required. The superiority of the profit maximization assumption, as compared with alternative constructions, must rest on factual rather than logical grounds. Thus the questions become: What alternative behavioral assumptions are proposed? What are their implications? And what does the evidence support?[7]

The alternative assumption proposed is based on the following arguments.

The behavior of people in organizations is purposive in two senses. First, behavior must be minimally oriented to a common organizational purpose, or it would not be meaningful to speak of an organization. Secondly, behavior within organizations is oriented to personal goals.

[6] Ibid., pp. 11-27.

[7] Ibid., p. 27.

The theory of the firm has traditionally recognized only the first of these goals, or, to the extent that the importance of personal goals has been acknowledged, these have seldom been made to have an explicit influence on the analysis. Indeed, even the minimally oriented organizational purpose of earning positive profits has generally been displaced by the assumption that firms are operated so as to maximize profits.[8]

Out of the host of factors that influence the behavior of the individual in all his capacities, only a subset is likely to be of major importance for understanding his behavior as a manager.

The partitioning of motives according to role is appropriate, if derived from the propositions that:

(1) Not every social situation which the individual encounters is equally efficient in satisfying each particular need.

(2) Satisfaction of a need in one capacity (for example, as a manager) has spillover value to other capacities.

Rational behavior, therefore, requires that the individual discriminate in his attempts to achieve need satisfaction. This selective pursuit of goals means that we can properly limit the analysis of behavior in any one environmental sector to that

[8] Ibid., p. 28.

subset of goals that is immediately relevant to that sector. The criteria for selection of goals to be included in the subset are:

(1) What satisfactions is the environment particularly well-suited to satisfy?

(2) What needs does the environment create?[9]

From the above criteria, Williamson arrives at the following conclusions:

In the operation of a business firm, the following are the immediate determinants of behavior: salary, security, status, power, prestige, social service, professional excellence.

Obviously, the objectives are interdependent and can be reduced, relative to opportunities available in other environmental situations. The opportunity to attend to social service objectives in the business firm is not too great and, to simplify, it is eliminated. The reduction yields:

(1) salary

(2) security

(3) dominance

a. status

b. power

c. prestige

[9] Ibid., p. 29

(4) professional excellence.

In general, managers operating in firms in the monopolistic sector should have relatively more opportunity to become sated with respect to security and dominance needs and, hence, give more attention to professional objectives than would managers in the competitive sector. Even social service objectives may become operative in regulated industries, such as public utilities and communications.[11]

The notion of expense preference is developed for the purpose of making the connection between motives and economic activity.

The desirability of transforming these nonpecuniary objectives into pecuniary terms, therefore, suggests itself to Williamson. He feels this indirect approach corresponds to the observation that, although desires cannot be measured directly, they can be measured by the outward phenomena to which they give rise.

> By expense preference I mean that managers do not have a neutral attitude toward all classes of expenses. Instead, some types of expenses have positive values attached to them: they are incurred not merely for their

[11] Ibid., p. 32

> contributions to productivity (if any) but, in addition, for the manner in which they enhance the individual and collective objectives of managers. Conventional economic theory treats all expenses symmetrically: individuals are indifferent toward costs of all types. Expense preference replaces this attitude of indifference by positive tastes for certain classes of expenses. Asymmetry thus develops in the attitude toward costs.[12]

Although the resulting model is expressed entirely in monetary units, it should not be interpreted as one in which pecuniary goals are the only objectives of the firm. Rather, the nonpecuniary goals Williamson indicated are manifested through the mechanism of expense preference, and in this way are assumed to influence the operation of the firm in systematic and predictable ways.

It should be emphasized, however, that the connections described below for relating motives to behavior are assumed.

Staff: It is assumed that the management has a positive expense preference for staff. Roughly this corresponds to general administrative and selling expense.

The selective expansion of operations may easily be perceived by the management as having benefits that can be distributed quite generally throughout the management hierarchy.

[12] Ibid., p. 33.

Since promotional opportunities within a fixed-size firm are limited (while to increase jurisdiction has the same general effect as promotion but simultaneously produces the opportunity for advance to all), the incentive to expand staff may be difficult to resist. Being a means to promotion, expansion of staff serves to advance both salary and dominance objectives simultaneously. In addition, staff can contribute to the satisfaction of security and professional achievement objectives as well.

Organization theorists have observed that the modern organization is a prolific generator of anxiety and insecurity. This insecurity is partly due to uncertainty with respect to the survival of the organization as a whole and more importantly (and more immediately relevant to its individual members) of the parts with which the individuals identify. Attempts to reduce this condition can be expected. The direction these efforts will take can be anticipated. If the surest guarantee of the survival of the individual parts appears to be size, efforts to expand the separate staff functions can be predicted.

The "professional" inducement to expand staff arises from the typical view that a progressive staff is one that is

continuously providing more and better services. An aggressive staff will, therefore, be looking for ways to expand. Although the relative contribution to productivity will be considered in choosing directions for expansion, the absolute effect on profit may be neglected. As long as the organization is able to satisfy its acceptable-level performance requirements, the tendency to value staff apart from reasons associated with its productivity produces a predisposition to extend programs beyond the point where marginal costs equal marginal benefits.[13]

The second connection for relating motives to behavior is:

> Emoluments. The term emoluments is used in a somewhat special sense. It refers to that portion of management salaries and perquisites that is discretionary. That is, emoluments represent rewards which, if removed, would not cause the managers to seek other employment. They are economic rents and have associated with them zero productivities. They are not a return to entrepreneurial capacity but instead result from the strategic advantage that the management possesses in the distribution of returns to monopoly power. Being a source of material satisfaction and an indirect source of status and prestige, they are desirable as a means for satisfying goals in each of these respects.
>
> Tax considerations aside, the management would normally prefer to take these emoluments as salary rather than as perquisites of office since taken as salary, there are no restrictions on the way in which they are spent, whereas, if withdrawn as corporate personal consumption

[13] Ibid., pp. 34-35.

(such as expense accounts, executive services, office suites, and so forth), there are specific limitations on the ways these can be enjoyed.[14]

The third connection is the profit term.

Discretionary Profit. Positive profits constitute the minimally oriented organizational purpose. Thus, zero profits place a lower bound on what is consistent with survival, whereas maximum profits place an upper bound on what is attainable.

Discretionary profit is that amount by which earnings exceed minimum performance constraint. That the managers should desire to earn profits that exceed the acceptable level derives from the relationship that profit bears to discretion, self-fulfillment, and organizational achievement. Since expansion of staff and emoluments can scarcely proceed independently of the expansion of physical facilities, and since financing of this expansion (whether from internal or external sources) will be tied to profitability of the firm, profits in excess of the minimum acceptable level may well be desired by the management. Moreover, managers derive satisfaction from self-fulfillment and organizational achievement and profit is one measure of this success. Taken together, these considerations favor the inclusion of a profit component in the firm's preference function.[15]

From the view of the arguments reviewed to this point, Williamson formulates his models in which it is assumed that

The firm is operated so as to maximize a utility function that has as principal components, staff, emoluments, and discretionary profit, subject to the constraint that reported profit be greater than or equal to the minimum acceptable level of profit demanded.[16]

[14] Ibid., p. 35.

[15] Ibid., p. 35.

[16] Ibid., p. 36.

Two other considerations are given with regard to the development of the utility function. Williamson argues that modern organization theory has tended to treat the firm as a coalition (managers, workers, stockholders, suppliers, customers), the members of which have conflicting demands which must be reconciled if the firm is to remain a going concern. In the sense that each group in the coalition is essential to the firm's continuing existence, the coalition can be considered as one in which the members are "equals." This view is more useful when observing the firm in a period of crisis than one in which survival is not a pressing problem. When survival is not a current concern, restoring a hierarchy of the members based on the attention they give to the firm's operation, leads to more productive insights. Management emerges, in this respect, as the chief member of the coalition. Its role as coordinating and initiating member as well as its access to information permit it to assume this position of primacy. Under normal conditions, then, it is appropriate to take the demands of the other members as given and leave it to the discretion of management to operate the firm in some best sense. His models are formulated and treated in this fashion.[17]

[17] Ibid., pp. 36-37.

The second consideration is the question of social choice. How can a single valued objective function be imputed to the firm? In the profit maximizing assumption, no question of a single value function is raised nor can it be an important issue, for managers will choose to operate the firm in the profit maximizing fashion. There is an assumption of unanimity. Due to this strong assumption, the theory provides predictions on how the firm will react to changes in data.

This assumption is sufficiently accurate to permit the theory to handle a large class of circumstances of interest to economics.[18] The argument on this point is that the existence of instituational uniformities justifies the assumption of an organizational utility function.[19]

This uniformity is essential to the viability of any organization. The value consensus in the business firm is due to the combined effects of a screening - selection proceedure with a socialization process. The former tends to provide members to the firm with compatible characteristics, the latter

[18] Ibid., p. 145.

[19] Ibid., p. 162.

is a process by which the major values of the groups are internalized by its individual members.[20]

The group maintenance needs and processes are certain to produce a leadership wherein decisions are made in a fashion that reflect collective preferences.[21]

The following is a summary of the arguments:

In the absence of vigorous competition in the product market, and where the separation of ownership from control is substantial, there is no compelling reason to assume that the firm is operated so as to maximize profit. Such behavior would appear to require an unusual degree of rationality, a complete detachment of individual interest from occupational decision making. Williamson proposes that, where discretion in the decision making unit exists, this will ordinarily be exercised in a fashion that reflects the individual interests of the decision makers. Because most of the decision making in the firm ultimately involves spending, "expense preference" would be a useful and meaningful way in which to study the behavior of the business firm. Two categories of expense preference were

[20] Ibid., p. 154.

[21] Ibid., p. 155.

identified and related to the motives of managers. They are the positive preference for staff and the positive preference for emoluments. A third preference category is identified as discretionary profit.[22]

Williamson proceeds to develop models that are responsive to some of his criticisms of the classical theory of the firm. This involves the construction of utility functions for the firm that makes the notion of "expense preference" explicit. He compares the responses with alternative models of the firm, the first being the "usual or single-period profit maximizing model," the second, a "discounted or multi-period profit maximization model," and finally he compares these to Baumol's sales maximization hypothesis.[23] Williamson classifies the models as "entrepeneurial models" in the case of the profit maximization models.[24] The utility models he develops are classified as "managerial discretion" models.[25]

He constructs the managerial models in three forms for descriptive purposes; a model with only staff and discretionary

[22] Ibid., p. 55.

[23] Ibid., pp. 38-39.

[24] Ibid., pp. 72-84.

[25] Ibid., pp. 38-60

profit entering into the utility function, a model with emoluments and discretionary profits, and a combined model, (staff, discretionary profits, emoluments).

Since, for expository purposes, the staff model and the combined staff and emoluments model display the principles, discussion in this paper will be limited to these models, and the profit maximization models. The similarities and differences between these models and their responses will also be discussed. A full discussion and demonstration of the models responses are contained in Chapters IV and V in his work. The following analysis, in the main, is directly quoted from his work.[26]

These terms enter into the analysis:

R = revenue = PX; $\partial^2 R / \partial X \, \partial S \geq 0$

P = price = P(X, S; E); $\partial P / \partial X < 0$; $\partial P / \partial S \geq 0$; $\partial P / \partial E > 0$

X = output

S = staff (in money terms), or (approximately) general administrative and selling expense

E = the condition of the environment (a demand shift parameter)

C = production cost = C(X)

[26] Ibid., pp. 40-45. Describes the staff model.
pp. 52-54. Describes the staff and emolument models.

M = managerial emoluments

π = actual profit = R - C - S

π_R = reported profit = π - M

π_0 = minimum (after tax) profit demanded

T = taxes, where t = tax rate and $\bar{T}$ = lump-sum tax

$\pi_R - \pi_0 - T$ = discretionary profit

U = the utility function

With staff and discretionary profit entering into the utility function, the firm's objective is taken to be

maximize: $U = U(S, \pi - \pi_0 - T)$

subject to: $\pi \geq \pi_0 + T$

The constraint can be written as $\pi - \pi_0 - T \geq 0$.

Assuming diminishing marginal utility and disallowing corner solutions, it follows that the firm will always choose values of its decision variables that will yield positive utility with respect to each component of its utility function. The second component is $\pi - \pi_0 - T$. If it is always to be positive, then the constraints will always be satisfied as an inequality. Thus the constraint is redundant and the problems can be treated as one of straight-forward maximization. Substituting the functional relationships for profits into the expression yields:

Maximize: $U = U\left[S, (1 - t)(R - C - S - \bar{T}) - \pi_o\right]$

The following first-order results are obtained by setting the partial derivatives of U with respect to X and S equal to zero.

(1) $$\frac{\partial R}{\partial X} = \frac{\partial C}{\partial X}$$

(2) $$\frac{\partial R}{\partial S} = \frac{-U_1 + (1 - t)U_2}{(1 - t)U_2}$$

(In this expression, U_1 is the first partial of the utility function with respect to S and U_2 is the first partial with respect to $(1 - t)(R - C - S - \bar{T}) - \pi_o$.)

From equation 1 we observe that the firm makes its production decision in the conventional fashion by equating marginal gross revenue to the marginal costs of production. However, Equation 2 reveals that the firm will employ staff in the region where the marginal value product of staff is less than its marginal cost. That is, the firm will operate where $\partial R / \partial S < 1$, whereas the usual short-period profit maximization model would employ staff only to the point where the equality between marginal costs and benefits obtains. Equation 2 can be rewritten as

(3) $$\frac{\partial R}{\partial S} = 1 - \frac{1}{1 - t}\,\frac{U1}{U_2}$$

where U_1/U_2 is the marginal rate of substitution between profit and staff; an increase in the ratio reflects a shift in tastes in favor of staff. In a profit maximizing organization this ratio is zero. These relationships are displayed graphically in Figure 1.

With staff plotted along the ordinate and output along the abscissa, isoprofit contours are imbedded in the XS plane. These contours are elliptical with major axes running from southwest to northeast.

That this is the correct relationship follows from the assumption that $\partial^2 R/\partial X\,\partial S > 0$. Under this assumption, the effect of increasing staff is to shift the marginal revenue curve of the standard price-quantity demand curve to the right so that necessarily, whatever the shape of the marginal cost of production curve, the optimum output increases as staff increases. To preserve this property in the construction of an isoprofit map on the output-staff plane requires that the isoprofit curves have major axes running from southwest to northeast.

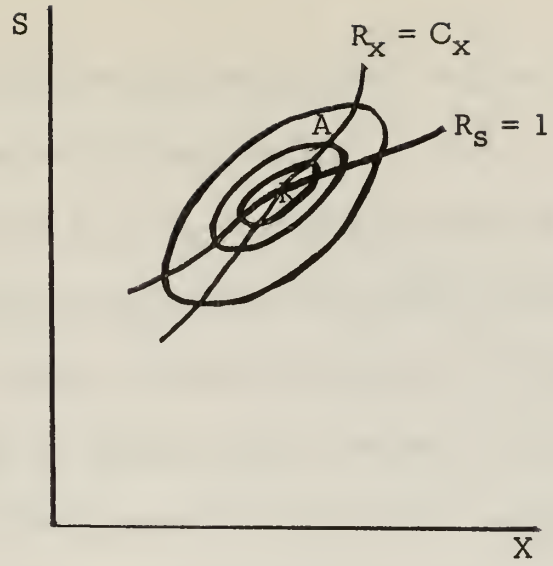

Figure 1

Connecting points of tangency between the isoprofit contours and a series of horizontal lines at successively greater levels of staff traces out the locus $R_X = C_X$ --i.e., the locus of optimal output given the level of staff expense. Similarly the points of tangency between the isoprofit contours and a series of vertical lines drawn at successively greater levels of output yields the locus $R_S = 1$. Their intersection, K, corresponds to the short-run profit maximization position.

Since the equilibrium relations are $R_X = C_X$ and $R_S < 1$, the utility mazimizing firm will take up a position somewhere along the locus $R_X = C_X$ but above the locus $R_S = 1$. Point A in Figure 1 represents such a position. Thus, the utility maximizing firm will choose a larger value of staff, and this will in turn give

rise to a larger value of output than would be chosen by the firm that maximizes short-run profit.

The locus $R_X = C_X$ specifies the pairs of (X,S) combinations along which the firm that has its utility function augmented to include a staff component will locate. For every value of staff there exists an optimal value of outputs, say $\hat{X}$, where $\hat{X} = f(S)$. Given the condition of the environment, profit depends on the choice of X and S, that is, $\pi = g(X, S; E)$. If however, X is chosen optimally, then

$$\pi = g(\hat{X}, S; E) = g\left[f(S), S; E\right] = g'(S;E)$$

Thus, profit can be plotted as a function of staff. This is done in Figure 2 with profit along the ordinate and staff along the abscissa. By introducing indifference curves between profit and staff, the quilibrium results can be interpreted somewhat differently. Again, the point K represents the profit maximizing position and A, the point where the tangency between the indifference curves and the profits curve obtains, is the position at which the utility maximizing firm will locate.

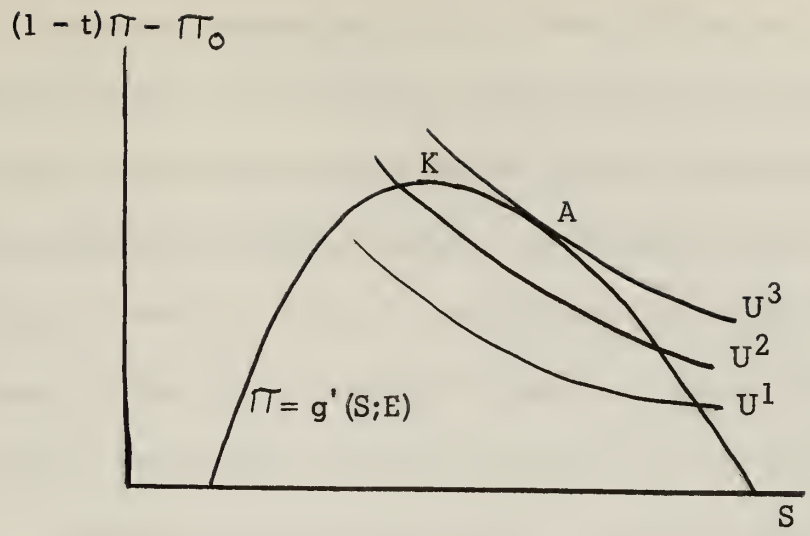

Figure 2

Several generalizations suggest themselves immediately. First, for the firm to select the point K requires that the slope of the indifference curves in the region around K be zero; that is, the marginal rate of substitution between profits and staff must be zero. Since MRS = $-\frac{d\pi}{dS} = \frac{\partial U/\partial S}{\partial U/\partial \pi}$, this implies that the marginal utility of staff in the vicinity of K must be zero. Either staff must be "objectively" valued only for its contribution to profit or the benefits associated with expanding staff must be exhausted before K is reached. If the argument regarding the positive preference for staff is accepted, the first of these can be dismissed and the second represents a limiting condition. Considering the variety of ways in which staff contributes to managerial satisfactions, the zero marginal utility condition seems unlikely to be realized.

A second observation is that if the profit curve is very sharply peaked, the resulting tangency will be one where the value of staff (and output) selected will not be far removed from the profit maximization position. As the profit curve becomes flatter, however, and as the indifference curves become more steeply sloped (i.e., as staff becomes relatively more highly valued), the tangency shifts progressively to the right.

The Staff and Emoluments Model. Staff and emoluments terms are both introduced into this model. That is, in addition to a positive preferene for profit, the management of the firm also displays a positive expense preference for staff and corporate personal consumption expenditures. The objective becomes

maximize: $U = U(S, M, \pi_R - \pi_o - T)$

subject to: $\pi_R \geq \pi_o + T$

Again the constraint is redundant so that the problem can be handled as a conventional maximization one. Substituting the functional relationships for profit into the expression yields:

maximize: $U = U\left[S, M, (1 - t)\ (R - C - S - M - \bar{T}) - \pi_o\right]$

First-order conditions for an extremum are obtained by setting the partial derivatives of U with respect to X, S, and M equal to zero. Thus we obtain

(4) $$\frac{\partial R}{\partial X} = \frac{\partial C}{\partial X}$$

(5) $$\frac{\partial R}{\partial S} = \frac{-U_1 + (1 - t)U_3}{(1 - t)U_3}$$

(U_1 is the first partial of the utility function with respect to S, U_2 is the first partial with respect to M, and U_3 is the first partial with respect to $(1 - t)\ (R - C - S - M - \bar{T}) - \pi_o$.)

(6) $$U_2 = (1 - t)U_3$$

Equation 4 reveals that the production decision is again made in a conventional profit maximizing fashion by equating marginal gross revenues to the marginal costs of production, and from Equation 5 it follows that the staff decision is again made so that the marginal value product of staff is less than its marginal cost ($R_s < 1$). Equation 6 discloses that the firm will absorb some amount of actual profit as emoluments, the amount being dependent on the tax rate.

Although the amount of profit absorbed as emoluments affects the level of discretionary profit, it has no direct influence on productivity.

Two versions of "entreprenuirial models" are examined.[27] The first is a short-run profit maximizing model. It assumes that the planning horizon extends over a single period. The second is a multiperiod model, a "long-run construction."[28]

Williamson states "that these models actually involve an elaboration of the standard profit maximizing model as applied to the analysis of monopoly behavior. The elaboration results from adding a staff term so that $P = P(X,S)$, $\partial P/\partial X < 0$ and $\partial P/\partial S > 0$, to the conventional monopoly construction, (where $P = P(X)$, $\partial P/\partial X < 0$). The argument for neglecting the staff term in the standard treatment of the theory of the firm is that the production and staff decisions are symmetrical. Hence, to include both yields no insights that are not obtained by looking at the output decision alone,... The necessity for introducing the two terms separately is shown in the long-period or discounted profit maximization model."[29]

The short-run model assumes:

maximize $\pi = (1 - t)\ (R - C - S - \bar{T})$

[27] Ibid., p. 72.

[28] Ibid., p. 73.

[29] Ibid., pp. 74-78.

First order conditions for a maximum are found by setting partial derivatives of Π with respect to X and S equal to zero. This yields

(7) $$\frac{\partial R}{\partial X} = \frac{\partial C}{\partial X}$$

(8) $$\frac{\partial R}{\partial S} = 1$$

Output is chosen so that marginal gross revenue is equal to the marginal costs of production, and staff is selected so that the marginal value product of staff is equal to its marginal cost.

The more responsive entrepreneurial model is obtained by devising a multi-period, discounted version of the profit maximization hypothesis. The variables are subscripted by time periods by i, where $i = 1, 2, \ldots, n$, and where n is the planning horizon. Letting r be the discount rate, profits in year i will be discounted by $1/(1 + r)^{i-1}$. Let this be represented by $\partial i - 1$. Staff expenditures in period K are assumed to have a positive influence on future period revenues over the entire planning horizon. The length of the period can be defined as the interval beyond which current production decisions have no effect, and the length of the planning horizon as the number of such periods for which current staff expenditures have a positive effect.

Letting Π represent the discounted value of profits, the objective is to:

$$\text{maximize } \Pi = \sum_{i-1}^{n} (1 - t)(R_i - C_i - S_i - T_i)\,\partial^{i-1}$$

First-order conditions for a maximum are obtained by setting the partial derivatives of Π with respect to X_1 and S_1 equal to zero. Thus, we have

(9) $$\frac{\partial R_1}{\partial X_1} = \frac{\partial C_1}{\partial X_1}$$

(10) $$\frac{R_1}{S_1} = 1 - \sum_{1=2}^{n} \frac{\partial R_i}{\partial S_i}\,\partial^{i-1}$$

Inspection of Equation 9 reveals that the firm chooses that value of output for which the marginal gross revenue is equal to the marginal costs of production. Equation 10, however, shows the current marginal value product of staff is less than its current marginal cost.

In testing this model for responses, Williamson introduces a minimum current period profit constraint of the following form:

$$(1 - t)\,\Pi_1 \geq \Pi_0$$

The Baumol model and the tests applied to it are not included in this paper for the discussion of this subject would

merely serve to lengthen the summary of Williamson's work and would not be productive of much insight.

The summary of the similarities and differences between the models and their responses is more germane to understanding and will not, it is believe, slight the content of Williamson's work.

The models developed were tested in Williamson's work for comparative static responses for change in the following parameters: E (the demand shift, environment), t (a change in profit tax rate), and $\bar{T}$ (a lump sum tax). The models can be compared on this basis.

Managerial Discretion model:

(1) Staff expenditures will absorb significant amounts of resources under conditions of favorable demand. These "excesses" will tend to disappear in the face of adversity.

(2) Expenditures for emoluments will tend to vary directly with the business cycle.

(3) Staff expenditures will increase if an excess profits tax is imposed. The same is true of emoluments.

(4) The lump sum tax will reduce expenditures for staff, emoluments; output will also be reduced, since optimal output depends on the level of staff selected.[30]

[30] Ibid., pp. 52-60

Profit maximizing models:

(1) Emoluments are not included in these models.

(2) Staff and output will move with the shift in environment.

(3) The response to the effects of a profit tax and lump sum tax contradict the discretion models. The short-run model is unresponsive to a shift in profits tax or a lump sum tax. Discretion models predict staff and output adjustments will occur in response to both types of tax. The multi-period model responses are more complex and depend on application of the constraint and on application of a "permanent" or "temporary" tax. In general, the multi-period model indicates staff and output will both be increased in response to a temporary tax, a permanent tax produces no change, and the lump sum tax produces no change.[30]

Williamson summarizes as follows:

> Although the direction of the response under the alternative hypotheses may be the same, there may be grounds for discriminating between the theories on the basis of differences in their gross quantitative implications... the utility maximizing firm will generally undergo larger adjustments in response to change in demand than will the profit maximizing organization, and these will tend to be concentrated in staff and emoluments. As indicated, these

[31] Ibid., pp. 81-83.

differences are due to the calculated accumulation (and, hence, decumulation) of staff and emoluments in the former that are not present in the latter.[32]

This gross quantitative result, Williamson states, "cannot be derived at a completely general level." It can, he states, be shown to be reasonable. The difference obtains from the fact that the utility maximizing firm has exhibited a positive taste for staff and has accumulated more than a profit maximizer would in the same circumstances. The size of adjustment would depend on "the change in the shape of the profit-as-a-function-of-staff-curve," the change in discretionary profit, and the tastes of the management for staff.[33]

Williamson uses the following graphic representation of a shift in profits as a function of staff. The direct vertical displacement of the curve is justified only because of ease of graphic treatment. "Actually," he states, "a more peaked condition would be reasonable."[34]

[32] Ibid., p. 83.

[33] Ibid., p. 91.

[34] Ibid., p. 92.

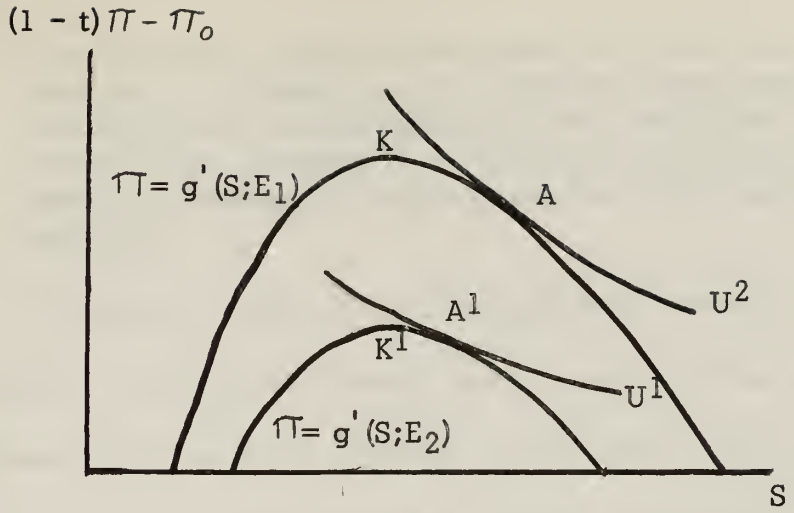

Figure 3

Williamson provides three case histories in which the adversity encountered consisted of a pairing of a leveling off in demand together with a drop in profitability and examines the cases in a general manner.

His evaluations take largely descriptive forms. An example:

> ...Possibly such a reconciliation can be performed without invoking the notion of expense preference. But clearly the explanation is much less difficult to provide if it is assumed that the firm displayed a positive preference for staff in the period preceding the profit decline.[35]

In another instance:

> The evidence seems to be roughly consistent with the discretion model. Thus the response of the firm to adversity is one where "ever-expanding" staff is removed and emoluments disappear. The more severe the conditions, the more extensive the cuts. Although the profit maximiza-

[35] Ibid., p. 97.

> tion hypothesis also predicts staff will be reduced in response to adversity, it is absolutely silent with regards to emoluments and quantitatively may be difficult to reconcile the amounts of the cutbacks observed, using a model constructed entirely around the profit maximization assumption....[36]

Williamson states that the demand shift parameter is difficult to deal with if demand goes negative in the models he proposes and "analysis would be complicated if substantial changes in output occurred as a result of adversity."[37]

The last points are mentioned, not in an argumentive sense, but to avoid misinterpretation of his thesis, since the adversity encountered in the Edsel case to be described does deal with a negative demand shift.

[36] Ibid., p. 122.

[37] Ibid., p. 92.

II. HISTORICAL BACKGROUND

In September, 1957, the Ford Company introduced a line of so called medium priced automobiles, the Edsel line. The line was developed, produced and sold to the public with as much determined effort, energy and expenditure of resources that a corporation the size of Ford could expend, and yet only eight hundred and five days later, the Edsel, as a product, slipped into the past history of the American economy.

The rise and sudden fall of a new product in the automobile industry would be of little significance considering the frequency with which such products have come and gone were it not for the fact that Ford eagerly embarked on the venture knowing the dismal record of previous attempts in this area.

In the history of the United States automobile industry, 2,900 makes had been introduced, and by 1957 only about 20 were still on the scene. The record during the maturity of the industry was as dim as it had been in the days of the Black Crow (1905), the Averageman's Car (1906), the Bugmobile (1907), the Dan Patch (1911). The big three, General Motors, Chrysler, and Ford had in later days introduced only the La Salle (1927), the Plymouth (1928), and Ford's last attempt, the Lincoln Zephyr and the

Mercury (1938). During the post-war years, the futile efforts of Tucker, Nash, Crosley and Kaiser were close at hand to be observed.[38]

The enormity of the risks of introducing a new automobile was possibly best summed up by Henry J. Kaiser in 1955 when he wrote:

> We expected to toss fifty million dollars into the automobile pond, but we didn't expect it to disappear without a ripple.[39]

Yet the Ford Company was willing to expend a reported quarter of a billion dollars on the Edsel from conception to introduction into the market.[40]

The company reported in early June, 1957, that 150 million dollars had been spent on basic facilities. This includes conversion required in plants to produce the car, 50 million dollars on special Edsel tooling, and 50 million dollars on initial advertising and promotion. Additionally, at this time, the Edsel division had added to the corporation payrolls eighteen hundred

[38]John N. Brooks, The Fate of the Edsel and Other Business Adventures (New York: Harper & Row, 1963), pp. 22-23.

[39]Ibid.

[40]Ibid., p. 18.

salaried employees and began to hire approximately fifteen thousand factory workers.[41]

The market into which the Edsel was introduced was a difficult market. Fortune Magazine characterized it by saying, "in the late 1950's, no big business has had a more uneven time of it than the automobile industry and never in its own erratic history has its fortune been so inconsistent."[42]

Fortune's analysts felt that the problem started in 1953 when the industry finally seemed to have satisfied the post-war shortage of cars. This shortage had been prolonged by the Korean War.

> In 1953, people had lots of money to spend but their demand for cars in unit terms was beginning to slow down. The industry met this challenge by offering more car per car, innovations like power steering, power brakes, automatic transmissions and frequent and striking style changes, so despite recession, 1954 dollar sales stayed high.[43]

The year 1955 was marked by the "easy credit terms" then available and this coupled with innovations made 1955 the record

[41] Ibid., p. 41.

[42] Gilbert Burck, Sanford Parker, "Detroit's Next Decade," Fortune, LX No. 4 (October, 1959), pp. 112-115.

[43] Ibid.

year for the decade; 7,400,000 units were sold with a dollar sales of 15.8 billion dollars.[44]

In 1956, sales fell to 5,900,000 units, ascribed generally by the industry to overbuying the previous year.[45] The year 1957 was a six million unit year and 1958 was a 4,700,000 unit year.

Fortune, in looking at this situation, assigns the problem to a too rapid car per car build up, coupled with an increasing realization per unit (in constant dollars) and by this time the industry had limited its potential market by cutting off buyers.

> ....the industry got 25 percent more real dollars per car than it got before the war. Between 1953 and 1957, it got another 10 to 12 percent. In the same years, however, unit sales rose only 4.5 percent. Value per car, in other words rose faster than consumer income. At the same time, the motor industry made its cars too much alike in appearance and price as well as size and power. By 1957, it took an expert to distinguish a fully equipped low price range car from a middle price range or even high price range car either in cost or appearance. Alfred Sloan used to say that it should be General Motors aim to provide a car for every purse and purpose. But by 1957-58 most of the industry found itself providing a more or less uniform car for a limited number of purposes.[46]

[44]See appendix, Table III.

[45]Sidney Furst and M. Sherman, Business Decisions That Changed Our Lives (New York: Random House, 1964), pp. 353-359.

[46]Gilbert Burck, Sanford Parker, "Detroit's Next Decade," Fortune, LX No. 4 (October, 1959), pp. 112-115.

Paradoxically as people's incomes rose, they were less inclined to put more money into single cars. Most families in the 4,000 dollar and over income groups were not suburbanites who found they needed special purpose cars and often more than one car.

Roy Abernethy, president of American Motors, stated that during this period American Motors felt that in addition to the increase in multiple car owners, another trend could be noted in consumer buying habits.

> There was increasing competition for the dollars that formerly went into the purchase of long, showy and costly automobiles. Back yard swimming pools, boats, winter vacations and higher education for children were diverting disposable income into new channels.[47]

The new contestants who entered this market were the Edsel and American Motors. Rambler sales grew during the industry's recession period from 100,000 in 1956 to 500,000 in 1958 and by the time the Edsel was no more (1959), all the major producers were manufacturing a compact.

[47]Furst and Sherman, op. cit., p. 359.

> Interestingly, the large car sales moved with the surge in the compacts in 1959-1960. Which shows that keeping your eye on the margin pays even in the auto industry.[48]

The failure of the Edsel, of course, created considerable comments in the periodicals of the day; Business Week, U. S. News and World Report, Motor Trend, Time, and such unlikely publications as Etc., the New Yorker and Harpers, not to mention newspapers, notably the New York Times and Wall Street Journal. More complete comment is found in the books by Brooks, Nevins, and Furst cited in this paper. The consensus of their post mortems on the why of the Edsel failure are assembled below:

The Economy: (1) the recession of 1958; (2) the narrowing of the market previously cited.

The Design and Quality of the Car: (1) the Edsel styling was poor, appearance was ludicrous; (2) the consumers disliked the front shield (dubbed the horse-collar); (3) there were too many mechanical imperfections in the first cars delivered; (4) the design of the car was not distinctive.

Marketing and Advertising: (1) the middle priced market is impossible to break into; (2) the price policy was poor because

[48] Burck and Parker, op. cit., p. 115.

the Edsel was priced both above and below the Mercury, and this confused the buyers; (3) "Ford cavalierly dismissed the consumer ....and as such the failure of the Edsel is a legend."[49] (4) "When the public is wooed in an excessively calculated manner it tends to turn away in favor of some gruffer but more spontaneously attentive suiter."[50] (5) the publicity campaign was allowed to degenerate.

Organizational Problems: (1) Ford executives were too "bullish in their outlook;" (2) the failure was due to the time lag between the decisions to produce the automobile and the act of putting it on the road, (a little more than two years); (3) intra-mural competition between the divisions of the Ford corporation; (4) the merger of the Edsel divisions with the Lincoln-Mercury division in January, 1958, making the product a "step child;" (5) the creation of an Edsel division and dealer organization which made the product subject to immature executive leadership; (6) irrational behavior on the part of Ford executives, (one unidentified, for obvious reasons, has been quoted as stating, "we were auto-intoxicated.").[51]

[49]Furst and Sherman, op. cit., p. 15.

[50]Brooks, op. cit., p. 19.

[51]Ibid., p. 11.

Motivational Research: (1) the major strategy in promoting the Edsel was based on the results of motivational research; and, since there is no accounting for consumer tastes, the strategy failed; (2) the name of the car, "Edsel" was a disaster considering that the promotion was to appeal to the unconscious quirks of the public; (3) motivational research fails to elicit meaningful responses from the subjects; (4) the Edsel was a child of motivational research which resulted in an appeal to irrationality and when faced with a decision on an expensive item, the consumer will be rational. When symbolic gratification can be gained from Playboy, (50 cents a copy), Astounding Science Fiction, (35 cents a copy), and television, (free), an expensive automobile cannot compete;[52] (5) David Wallace, the Edsel's director of planning for market research, states that the launching of the Soviet "Sputnik," on October 4, 1957, spoiled the market because, "it shattered the myth of American technical pre-eminence, precipitating a public revulsion against the fancy baubles of Detroit. I don't think we yet know the depths of the psychological effect that that first orbiting had on us.... The

[52]S. I. Hayakawa, "Why the Edsel Laid An Egg," Etc., Vol XV No. 3 (Spring, 1958), pp. 217-222.

American people had put themselves on a self-imposed austerity program. Not buying the Edsel was their hair shirt."[53]

The summation of the reasons, a measure of validity in some, for the failure of the Edsel would appear to be the "classic case of the wrong car, for the wrong market, at the wrong time."[54]

Based on reported dollar investment in the Edsel and the estimated losses incurred in producing it, the Ford Company would have been in the same position if, in 1955, it had decided not to produce the Edsel at all but simply to give away 110,810 units of the Mercury, its comparably priced car. "The Ford Company, it seemed, had endeared itself...by playing the great American situation-comedy role of Daddy the Bungler."[55]

In another respect, the unhappy end of the Edsel was not as complete a failure as it seems on the face. Complete figures are not available in the public reports of the Ford Motor Company, and the only data available to this writer and Brooks as well was

[53]Brooks, op. cit., pp. 61-70.

[54]Ibid., p. 68.

[55]Ibid., p. 69.

from these reports and press releases of the company. The following breakdown, however, is concurred by Nevins and Hill who had access to the data while preparing their three volume history of the Ford Company.[56]

Expenditures. 250 million in development, 200 million while in production, less 100 million of investment salvageable for other purposes, for a total loss of 350 million dollars.

Sales and Production. Standard volume was estimated at 200 thousand units per year, total sales during the life of the car (between 26 and 27 months) 109,466. The total production was 110,810. The difference, 1,344 units, largely 1960 models, were disposed of at greatly discounted prices. The estimated loss per unit produced was 3,200 dollars (about the price of an additional unit).

Profits. Net income fell from 294 million in 1957, to 116.2 in 1958 (not completely attributed to the Edsel), but climbed back to 451.4 million in 1959 (the Edsel was still on the market), and fell a little in 1960 to 427.9 million (no Edsel being produced). The complete breakdown is in Table I in the appendix. How much

[56]Allan Nevins and F. E. Hill, Ford Decline and Rebirth 1933-1962 (New York: Charles Scribner's Sons, 1963), pp. 339-441.

of the fluctuation to attribute to the Edsel and how much to the other products which also had a bad year in 1958 cannot be determined from the figures available.[57]

Even Brooks, who is not an apologist for the company, admits that Ford recovered rather nicely. The absolute sizes of the investment, however, are large and speculation on the attitude to risk involved, exhibited by the management, is worthy of considerable consideration, if one views the corporation from the view of a profit maximizing firm. It is reasonable to hypothesise that a pure profit maximizer might have arrayed alternatives on the decision to embark on the venture in the following manner.

(a) Retain our current share of the market, do nothing.

(b) Gain more of the middle price market by added emphasis on the Mercury and Lincoln.

(c) Enter the middle price market with Edsel.

(d) Enter the other side of the market with a lower price or compact car.

[57]John N. Brooks, The Fate of the Edsel and Other Business Adventures (New York: Harper & Row, 1963), pp. 61-70; "New Developments in Marketing," Business Week, (June 8, 1957), p. 61; Ford Motor Company Annual Reports, (1955-60); Allan Nevins and F. E. Hill, Ford Decline and Rebirth 1933-1962 (New York: Charles Scribner's Sons, 1963), p. 440.

Having chosen alternative (c), the following alternatives were still available.

(a) Produce and sell in an existing division with existing dealers.

(b) Produce and sell in an existing division, but create a new dealer organization.

(c) Produce with a new division but sell through the existing dealer organization.

(d) Produce with a new division and sell with a new dealer organization.

Alternative (d) was chosen in the case of the Edsel. It was the alternative with the greatest expense involved and apparently the alternative with the highest risk involved.

III. PURPOSE

It is the purpose of this paper to document the history of the Edsel and to compare this history to the frame work proposed by Williamson on the behavior of a firm.

The review will be conducted with the intention, in a limited sense, of confirming or denying Williamson's assumptions. Examination of a single case cannot of itself, of course, confirm or deny, but it can add credibility to assertions for confirmation or denial.

A review of the history can provide insight into the ways the firm perceives its problems, a description of the processes it employs in responding to those problems, and some of the details of the magnitudes involved. Historical review has a weakness that is inherent in its method because of the problems of generalization that arise.

If, however, a theory is to stand, it should be capable of historic test in the environment that it proposes to explain. The theory should, on examination, also be subject to an evaluation in relation to other theories which it attempts to supplant or complement.

It is assumed that the history of the Edsel can supply this test.

CHAPTER II

ESTABLISHMENT OF THE CORPORATION'S OBJECTIVES

If Ford managers were to satisfy a utility function made up of managerial objectives, a value system or value consensus must be operative.

> The image of value is concerned with the rating of the various parts of our image of the world, according to some scale of betterness or worseness.[1]

It can be assumed that if Ford managers were to judge their relative position or status in the automobile industry, they would compare themselves to Chrysler Corporation on the lower end of the scale and to General Motors at the upper end. In the case of Ford, the orientation to General Motors was most unique.

> When Henry Ford II took up the reins of power after... September, 1945, he drove a chariot which to discerning observers resembled the fabled one-hoss shay at the moment before its collapse...some thought it in even worse state than that. "You've got to remember," said long time executive, J. R. Davis, "that when young Henry came in here the company was not only dying, it was already dead, and rigor mortis was setting in."[2]

The company was faced with an overwhelming array of problems. The managerial structure of the organization, never

[1]Kenneth E. Boulding, The Image (The University of Michigan Press, 1956), p. 12.

[2]Allan Nevins and F. E. Hill, Ford Decline and Rebirth 1933-1962 (New York: Charles Scribner's Sons, 1963), p. 294.

clearly defined, had been damaged by power struggles, deaths, resignations, and discharges.[3]

Conversion to peace time production demanded great expenditures for machine tools, factory remodeling, and new plants. Scarcities of essential materials, government control of purchasing and selling were additional problems.

Financial management, because of Henry Ford's hostility to systematic accounting, was confused and "almost chaotic."[4]

Tractor production which had continued during the war had never shown a profit and did not hold promise of one at that time. Various activities by Henry Ford outside automotive production were registering losses. With the exception of the war years, company operations since 1930 showed an overall deficit, and greater losses seemed certain before a gain could be registered.[5]

The twenty-eight year old Ford did have certain assets which would, if employed wisely, work to his advantage. He exhibited a capacity for effective leadership. There was a cash

[3]Ibid., pp. 295-297.

[4]Ibid., pp. 296.

[5]Ibid., pp. 294-297.

balance of $685,034,892 as of June 30, 1945,[6] and a base of effective plants.

I. FORMING THE ORGANIZATION

Henry Ford II approached the company's problems through two basic methods. He set out to acquire a group of capable top executives and through a process of decentralization build a growing, forward looking organization. His recognition of management problems shaped by his grandfather's dominant influence in the management area is largely responsible for the form the corporation would assume.

Ford's first step was to gather a temporary team. On September 27, he sent a directive to all chief Ford officials announcing the men who would head Ford activities.

> Manufacturing, M. L. Bricker; Sales and Advertising, J. R. Davis; Purchasing, C. H. Carroll; Engineering, R. H. McCarroll; Foreign Operation, R. I. Roberge; Accounting, Auditing, and Finance, B. J. Craig and H. L. Morkle; and Industrial Relations, J. S. Bugas. In this group, Ford had only three men of the highest ability, Bricker, Davis and Bugas, while he had wanted "eight or ten." But he was forced to work with what he had and the team represented a step toward order.[7]

[6] Ibid., p. 295.

[7] Ibid., p. 296.

On October 3, 1945, he called these men together in a group to a meeting of what was to be termed the "policy committee," which began discussions of company problems.

The many problems associated with reconversion prevented a thorough study that must preceed the essential changes that had to be made. But, the fact that the way out lay in disentangling activities that had been lumped together, decentralization was recognized at these early meetings. For example:

> J. R. Davis, at the first meeting...urged that, "In all cases, complete separation must be had between the sales organization and the manufacturing organization."[8]

On October 18, Ford himself suggested a separate Lincoln Division, which would have its own purchasing, cost, and sales departments.[9]

The earliest acquisition of personnel was the Thornton group, later to be known as the "Whiz Kids." This group of ten former Air Force officers, which was eventually to provide Ford with six vice-presidents and two presidents, first contacted Ford in

[8] Ibid., p. 297.

[9] Ibid.

November, 1945,[10] and reported for work in February, 1946.

The leader of the group, Charles Bates (Tex) Thornton was, at the time, head of the Air Force Office of Statistical Control.[11]

The full group consisted of Thornton, George Moore, Wilbur R. Anderson, Charles E. Bosworth, J. E. Lundy, Robert L. McNamara, Arjay R. Miller, Ben Davis Mills, Francis C. Reith, and James O. Wright. Reith was later to play a dominating role in the Edsel decision.

> Henry II had every reason to feel that his acquisition of the Thronton group had brought the firm a useful reservior of talent. He seems never to have considered...that it could serve as a chief force in remaking the company. He knew that, however high the abilities of the newcomers might be, they were mere infants in the automotive world, and would remain so for some time to come. Ford saw that his primary need was a general director of operations...a man who knew automobiles and the men who made them far better than did he.[12]

The man Ford decided on for this position was Ernest R. Breech, at the time president of Bendix Aviation Corporation and he commenced efforts to hire him in early 1946.[13]

[10] Ibid., p. 308.

[11] Ibid.

[12] Ibid., p. 312.

[13] Ibid., p. 313.

Breech was a certified public accountant and was employed by the Yellow Cab Manufacturing Company when it merged with General Motors in 1925. He moved through the ranks at General Motors to become general assistant treasurer and then president of the aeronautical division, North American Aviation and in 1939, became a vice-president of General Motors.[14]

Breech was familiar with the Ford operation and being so, had little desire to join the organization which he knew was badly deteriorated and which he said he viewed with "contempt and pity."[15]

He later stated that his only reasons for discussing Ford's offer was that Ford was currently a customer of Bendix.

> "I knew I wasn't coming," he recalled. "I liked my job at Bendix. I named my own board of directors. I was having a good time." The only thought in his mind was, "How am I going to get through this and keep a good customer?"[16]

Despite Breech's tactful refusals, Ford kept on his trail and finally persuaded him to come to the Ford office, look things

[14] Ibid.

[15] Ibid., p. 314.

[16] Ibid., p. 315.

over, and give him some advice. After having looked things over, and noting that the company was losing about $10,000,000 a month, and determining that except for the post-war period with its unusual demand for cars, the situation would be hopeless, he decided to take Ford's offer.

Breech later stated in an interview that he discussed the problem with his wife and in the following manner arrived at his decision.

> "Well, here is a young man that is only a year older than our oldest son. He needs help. This is a great challenge....I hate to take on the job, but if I do not do it, I will always regret that I did not accept this challenge."[17]

Breech joined the company on July 1, 1946. Along with Breech came two more graduates of the General Motors Corporation, Lewis D. Crusoe, by orientation a financial manager and Harold T. Youngren, an engineer. Actually, Breech had not accepted Ford's offer until he was assured that these two men would also come to Ford.[18]

Breech's attitude on the Ford Motor Company was largely shared by the other men who followed Breech to Ford. Crusoe has been quoted as saying:

[17] Ibid.

[18] Ibid., p. 317

"We (at General Motors) looked on Ford as Mr. Kruschcev looks at West Germany...."[19]

Youngren and Crusoe were followed by other General Motors graduates. Delmar S. Harder was hired in October, 1946, as vice-president in charge of operations. He displaced Bricker who was moved to a vice-presidency, but away from direct operations. Henry Ford has stated that he felt Bricker was slowing down a bit but that he didn't want to lose the experience Bricker had.[20] Harder had worked with Crusoe at Fisher Body and had been production supervisor for General Motors.

M. E. Sheppard was another 1946 addition. Sheppard was from Fisher Body; he assisted Crusoe in the financial plans for the reorganization which was then in progress.

John Dykstra, a production head at Oldsmobile, was hired on March 12, 1947. Breech created the position of vice-president and general counsel. The position was filled by William T. Gossett, formerly general counsel at Bendix.[21]

[19]Ibid., p. 317.

[20]Ibid., pp. 318-319.

[21]Ibid., p. 323.

It was at this point in the spring of 1947 that Henry Ford was quoted as saying, "The first string is now complete."[22]

This listing of personnel acquisitions on the part of Breech was to be expected and was certainly in line with Henry Ford II's desires.

The only principle executive acquired in this period who was not from General Motors was Albert J. Browning, who was hired as a vice-president to head purchasing. Browning came to Ford in April, 1946, from the War Department, where he had headed its wartime purchasing activities. Browning's appointment was encouraged by Breech.[23]

The men from G. M. were not the only future top executives of the corporation. Theodore O. Yntema was hired to replace Crusoe when he moved to the head of the, yet to be created, Ford Division, and James J. Nance would be hired later still.

The influx from General Motors, was a pronounced on the lower levels. C. E. Wilson, president of General Motors, complained of these inroads into his personnel in 1948 when he

[22]Ibid., p. 323.

[23]Ibid., p. 318.

counted 150 "second and third level people"[24] who had shifted to Ford.

II. DECENTRALIZATION AND REORGANIZATION

Breech brought not only men and concepts to Ford, but also the book. Peter F. Drucker, in April, 1946, had published, Concept of the Corporation.[25] Drucker, an outside consultant, had written the book based on an eighteen month study of the General Motors Corporation. The book called for, among other things, decentralization and full participation of employees. Breech actually carried copies of this book with him when he arrived at Ford.[26] These concepts were not foreign to the Thornton group which, along with Sheppard, was placed under Crusoe's direction and worked on reorganization plans for the company.

The ideas on reorganization that Breech professed, conformed to the decentralization that Henry Ford II and J. R. Davis had envisioned. The actual process occurred over a period of several

[24]Ibid., p. 357.

[25]Peter F. Drucker, Concept of the Corporation (New York: Beacon Press, 1960).

[26]Nevins, op. cit., pp. 325-327.

years, with General Motors serving as a model. All six G. M. cars were produced by self-contained divisions, as were other products. The central staff of the company laid down general policy, allotted funds, and distributed information through a system of committees, but otherwise the divisions were independent.

The first step in the decentralization process was the creation of the Lincoln-Mercury Division at Henry Ford II's direction. In addition, a second step had been taken, the creation of a Light Car Division which was to produce a small cheap car by 1947. The light car was a long time Ford objective, dating from the late nineteen thirties.[27]

On May 20, 1946, Thornton presented the policy planning committee with a plan for a project to systematize the organization of the company. This proposal was accepted and Henry Ford II placed Thornton in charge of the project. Thornton presented a letter for Ford's signature which would give him the broad authority necessary to under take the project. Ford showed it to Breech, who had not yet arrived at Dearborn. Breech informed Ford, "If you sign this letter, there is no need for me to join

[27]Ibid., pp. 311-320.

the company."[28] Breech suggested that the Thornton group retain its present status until after his arrival at Ford.

Breech placed the planning group directly under Crusoe who functioned as his executive assistant until he was made controller and finally vice-president in charge of finance. The planning group consisted of the Thornton group, M. E. Sheppard and later the accounting firm of Lybrand, Ross Brothers and Montgomery who were hired to assist in financial planning.[29]

The first organizational efforts of this group resulted in the proposal of four division; Light Car, Lincoln-Mercury, Rouge (manufacturing departments and plants), and Ford. Inclusion of a Ford Division was notable for, objected to by J. R. Davis, it did not come into existence until three years later. The organization manaul and financial programs were also presented and adopted during the same period, August 23, to September 16, 1947.[30] The language and classification system of the manual adopted the G. M. system "which Breech, Crusoe, Youngren, Harder all knew, and was consistant and usable.[31]

[28] Ibid., p. 20.

[29] Ibid., pp. 327-328.

[30] Ibid., pp. 329-330.

[31] Ibid.

The key, of course, in the decentralization was the establishment of "profit centers," a term which appears to have been coined at Ford in this period and would later pass into popular use.[32]

The organization's general form was completed, with the exception of the Ford Division, by May, 1947. The Light Car Division came to a rather sudden end.

On August 15, the light car was still very much in the picture, but Youngren felt it was crowding the engineering schedule. During the same period, General Motors, which was also developing a light car, gave up the project "because of too many other problems."[33] Breech directed a survey be conducted. The results indicated "most Americans wanted larger cars.... When we begin to ask about accessories, comments from all areas show...that radios, heaters, lighters, clocks, sun-visors and ash trays are now regarded as necessities."[34] The Light Car

[32] Ibid., p. 328.

[33] Ibid., p. 333.

[34] Ibid.

Division was discontinued on September 13, 1947, although the work in progress became the "French Ford."

Creation of the proposed Ford Division was possibly the most significant change in the organization and Nevin's history is quoted directly on this change.

> With the appearance of the 1949 Ford, the time approached for the creation of the Ford Division. This had been difficult...and would come more easily after new personnel had been absorbed and the process of reorganization was understood and put into practice. Furthermore, certain high executives were not ready for it. Not only Davis, but Bricker and Youngren objected. Breech followed the policy he had learned from Alfred P. Sloan, Jr., at General Motors: "Wait until the opportune time." Early in 1949, this seemed to have come. Bricker was about to retire to a director-consultant status, Davis had suffered a heart attack, and while he retained his vice-presidency, was replaced as sales manager by Walker A. Williams....
>
> Crusoe was to head the division.
>
> One circumstance perhaps helped to hasten the setting up of the new division. The 1949 Ford, despite its promise, (it was Youngren's car) showed many minor defects; one of Breech's friends, late in 1948, telephoned him that "these cars are a piece of junk," and particularized his assertion. A meeting of the Ford officials concerned took up the complaints. It was difficult to pin responsibility for them; engineering blamed manufacturing, and vice versa. Breech may well have recognized that with a Ford Division, the responsibility would have been easier to fix, and the fault easier to repair.[35]

With the creation of the division, Breech completed the major changes at Ford. The only member of the original Ford

[35]Ibid., pp. 342-343.

team remaining in a dominating position was Bugas. The changes that had taken place had caused no friction between Breech and Henry II.

III. SUMMARY

> The objectives of a firm serve as the continuing guiding force for all the company's activities. The goal of all its planning, and the base from which the administrative policies of the firm emerge....Objectives established over time develop a certain character and create an image of the firm.[36]

Breech in rebuilding Ford had shaped it to the image of General Motors, of this there is little doubt and that is exactly what Henry Ford II hired him to do. In measuring the corporation's progress over time, Breech and his executives would continue to apply the G. M. yardstick. There is little doubt that when Breech stated in 1950 that his objective was to build Ford to the number one position in the industry, and "beat Chevrolet,"[37] he meant exactly that.

In choosing his staff, Breech had a relatively free hand and his selection of these personnel from his former associates at General Motors can only be described as typical or expected.

[36]Thomas J. McNichols, Policy Making and Executive Action (New York: McGraw Hill Book Company, 1963), p. 10.

[37]"Business Portraits," Fortune (April, 1950), p. 15.

They were after all the men he knew and certainly, G. M. was a ready source of experienced automobile men. Holding Thornton in check insured Breech's dominance from the start and allowed Crusoe to influence the other men in the group. Crusoe has explained, "They knew nothing about business and the automobile industry. Their knowledge was from books."[38] An unidentified member of this group later stated, "I could not have had better experience than I got under Mr. Crusoe's direction."[39]

Williamson argues that the existence of institutional uniformities permit the proposed utility function to accommodate social choice problems.[40] He further states that:

> Although the leadership in the business firm is...subject to constraints, often these will be redundant. That is, the head of the organization will not find it in the least bit constraining to make his choises from a subset known to be acceptable to his subordinates....[41]

The rebuilt Ford organization would appear to have established a group of executives, among whom choice problems would not be constraining.

[38]Nevins, op. cit., p. 327.

[39]Ibid.

[40]O. Williamson, The Economics of Discretionary Behavior; Managerial Objectives in a Theory of the Firm (Englewood, N. J.: Prentice Hall, Inc., 1964), p. 162.

[41]Ibid., p. 156.

> Ford and Breech worked together so harmoniously that to their associates they seemed almost interchangeable. Discussion of proposed policies could be invoked by any of the "team." "We can get a decision at lunch-time," asserted one vice-president.[42]

Interpreting the public statements of men is, perhaps, one of the least credible endeavors of a historian. A public statement is, perhaps, in one sense, the equivalent of a cheer at a football game. No one expects the other team to really be given "the axe," yet in another sense, it does reveal the desire of the crowd. It is in this sense that the following statement of Breech is offered as an objective of the Ford Motor Company.

> "My job," said Breech, "was to develop personnel, organization, and policy methods of the Ford Motor Company." When asked, "To what end, Mr. Breech?" he replied: "To the end of becoming the leading automobile manufacturer in the United States."[43]

Some writers have speculated on the type of transformation that occurred in Ford. The skills and concepts contained within an organization policy are an obvious element in the company's capabilities and probably less easy to change than plant and equipment. The effect of these on the ability to produce new products is obvious and is a significant criterion in selecting among product alternatives.[44]

[42]Nevins, op. cit., p. 344.

[43]Ibid., p. 320.

[44]J. A. Howard, Marketing: Executive and Buyer Behavior (New York & London: Columbia University Press, 1963), p. 41.

CHAPTER III

CONSIDERING ALTERNATIVES

"A corporation is a social institution.....It is an institution that tends to develop within it pressure groups and empire builders. It develops taboos, prejudices, policies and rules of thumb. It develops sacred cows and scapegoats. It has pride in every corner instead of being oriented toward the conquest of some aspects of the external environment; it has an inclination toward introspection; it is overly concerned with its own internal problems.....The energies of the more talented, more aggressive, more ambitious employees often seem to be taken up with internal problems of power, prestige, and position."[1]

While there is some truth in the above quotation when applied to Ford or to any organization, at least the history reveals that in deciding on the Edsel, they, over a period of years, at least, considered the alternatives.

A report was presented to the Product Planning Committee on February 17, 1949. It revived interest in the light car, at least for a time. The report held that there were four million potential customers for such a car and the first company to

[1]Thomas Ware, "An Executive's View Point," Operations Research, Vol. VII (1959), pp. 3-4.

produce one "would enjoy a distinct advantage of exclusive penetration of the market," and that public interest warranted "continuing and intensifying engineering development work in that field." The car was opposed by Crusoe who felt that the Ford Division "should be allowed to determine what it believed the desirable Ford passenger car should be." The engineering people also felt that it would require "devoted attention" that could not be given to it at this time because of a crowded schedule. The proposal was made that engineering should give the program continued study on a not-to-interfere basis.[2]

At this time Ford had gained only 18.82 percent of the market and net income for 1948 had been 96 million, 4.6 percent of sales.[3] They were still number three in the industry behind G. M. and Chrysler.

The light car question was considered again in 1951 and 1952. In each case it was rejected by the Ford Division. "To the average American" the Division said:

> Our present car and its size represents an outward symbol of prestige and well-being. It seems reasonable to

[2]Nevins, op. cit., p. 350-352.

[3]See Table III, also Nevins appendix.

ask if we need a smaller car, do we need a smaller refrigerator or a smaller washing machine?[4]

The division again won its point and the light car remained on a research basis. This period was not a good period for introduction of new cars since the Korean War had brought production controls, price controls and material controls. These quota controls were particularly vexing to Ford since they had been fixed on the basis of 1947-1948 production and gave an edge to Chrysler at a time when Ford felt they could gain more of the market. The controls were not lifted until the spring of 1953.[5]

In 1950, Ford held twenty-four percent of the market, Chrysler 17.6 percent; G. M. was in first place with 45.38 percent. Ford had become number two in the industry but felt that the controls set them back and prevented growth.[6]

The Light Car as a distinct project never appeared again as a serious consideration until the compact cars became a big selling item in 1958.

[4]Nevins, op. cit., p. 369.

[5]"U. S. Business, The Auto Industry," Time, Vol. 76 No. 4, (July 23, 1953).

[6]See Appendix, Table III.

The Lincoln-Mercury unit headed by Benson Ford was selling in the medium and high priced field and would seem to hold some promise for expansion. As Benson Ford stated in 1950, "From the view-point of the total Ford Motor Company, what should Ford owners graduate to? The next logical step would be a Mercury."[7] The Mercury did not seem promising to the executive committee although it consistently held over 4.5 percent of the market.[8] In 1950, it sold as well as the Dodge or Oldsmobile and remained competitive with these cars throughout the period the Edsel was in planning. Benson Ford seemed "unable to push a point of policy against men like J. R. Davis, Harder, Yntema, Breech or Henry Ford II.[9]

The unresolved problem that bothered the executive committee seemed to be this:

> Forty percent of new car buyers switch makes, either sticking with the over-all manufacturer of their old model or going to rival makes.....eighty-seven percent Chevrolet owners stay in the G. M. family when they move to a higher price car--they buy Pontiacs, Oldsmobiles, Buicks, even Cadillacs. But only twenty-six percent of Ford owners move up to a Mercury. About sixty-nine percent stick with one of Ford Motor Company cars.[10]

[7]Nevins, op. cit., p. 369.

[8]See Appendix, Table III.

[9]Nevins, op. cit., p. 368.

[10]"New Developments in Marketing," Business Week (June 8, 1957), p. 61.

Crusoe stated, "We seem to be growing customers for G. M."[11]

In December, 1954, after two years of preparation the Forward Product Planning Committee submitted to the Executive Committee, a six volume report. The report predicted among other things, that the G. N. P. by 1965 would be 535 billion (exceeded in 1961 by first quarter rate of 542 billion, constant dollars). The number of cars in use would be 70 million (72.1 million were registered in 1964). More than half the families in the nation would have incomes of over five thousand dollars a year and more than 40 percent of all cars sold would be in the medium price range or better. The report further stated that Ford should be in the medium-price field by that time.[12]

This report seemed to reinforce the impression which dated from pre-war years that the Ford Company needed at least four basic cars to compete with G. M. who offered five (Chevrolet, Pontiac, Oldsmobile, Buick and Cadillac), and even Chrysler, who offered four (Plymouth, Dodge, DeSoto, Chrysler).[13]

[11]Nevins, op. cit., p. 370.

[12]John N. Brooks, The Fate of the Edsel and Other Business Adventures, (New York: Harper & Row, 1963), pp. 20-22.

[13]Nevins, op. cit., p. 376.

Henry Ford II had appointed a so called "Davis Committee" in January, 1952, to investigate this problem. The committee was comprised of the company's "senior talent.": J. R. Davis, Crusoe, Harder, Walker Williams, Yntema and Youngren. The committee reported on April 30, 1952.[14]

Although Henry Ford II had suggested that a suitable program "may require the introduction of another car name, a new dealer organization, and an additional car division;" the report recommended only one of these changes.

The committee proposed that a new body be introduced with the 1956 model and used for the Lincoln Cosmopolitan and Capri to compete with the higher priced Buick and the Oldsmobile, to be known as a Mercury; and that a lower-priced Mercury should be taken from the Ford shell to compete with the Pontiac.[15]

The higher priced Mercury would be a new car, but the committee explained that it were introduced with a separate name the outlay involved and the risks to be taken would be great, and that the wiser policy would be not to undertake them. It pointed out that General Motors had a record of three new name car

[14]Ibid.

[15]Ibid., pp. 375-377.

failures: the Marquette (1929, dropped in 1930), the Viking (1929, dropped in 1931), and the La Salle (1927, dropped in 1940). It further pointed out that if a new name were introduced, a new dealer organization might be required, and that "this would be difficult and risky."[16] The committee did recommend that the Lincoln-Mercury Division be split and that the Continental, discontinued in 1948, be revived.

The Continental was reintroduced and a separate division was established in July 1, 1952, headed by William Clay Ford. The other recommendations of the Davis Committee were "shelved indefinitely" in January, 1953, "coming as it does, concurrently with substantial expansion in our facilities programs."[17]

The Continental had never been a seller. It was introduced in 1939 and discontinued in 1948. Only 5,322 units had been produced. Fortune magazine reported in 1950 that there was general agreement among dealers that the Lincoln-Continental was one of the most striking United States automobile designs in the past twenty years. The Museum of Modern Art featured the vehicle in a showing during the same period. Its return to

[16] Ibid.

[17] Ibid., pp. 379-380.

production, according to Nevins, "seemed imperative."[18]

On May 18, 1954, the Lincoln-Mercury Division made another proposal to "invade" the medium to upper price range. The car they proposed would have a Lincoln Body shell and a Mercury chassis; it would sell above the Mercury. The real difference between this proposal and the Davis Committee's proposal was that Lincoln-Mercury proposed a new name. They referred to the car as "the Edsel for identification." The Ford Division objected to the fact that this might "put a lid on the Ford Division specifications." The proposed car from this point on was known as "the E car."[19]

I. SUMMARY

A decision maker's definition of the situation is made up of the following elements:[20]

(1) Assumptions about future and current events.

(2) Knowledge of alternatives available for action.

(3) Estimates of the consequences of each of these alternatives.

[18] Ibid., p. 377.

[19] Ibid., p. 381.

[20] J. A. Howard, Marketing; Executive and Buyer Behavior (New York & London: Columbia University Press, 1963), p. 24.

(4) Goals.

Normative decision processes require that these four elements be brought together in choice situations. In the case of the Edsel it would appear, that at least over a period of years, each of the alternatives hypothesized in Chapter I had been considered.

This chapter has made an attempt to array the alternatives considered by Ford Motor Company on their product decision. In doing this, some perspective is lost in the treatment of the "light car" alternative. During the period under consideration, there was a considerable body of evidence that a smaller, cheaper car would not sell. The Nash, Crosley and Henry J. were examples of seeming public rejection of small cars. The 1954-1955 model year seemed to indicate a rejection of the lower priced Mainline Ford in favor of the more expensive Fairlane. Crusoe classified the mainline as "practically non-salable."[21] Abernethy attributes this to the G. M. approach of "bigger means better" adopted by the industry. The concept of the smaller car does not require a sacrifice in functional utility.[22]

[21]Nevins, op. cit., p. 382.

[22]Sidney Furst and M. Sherman, Business Decisions That Changed Our Lives (New York: Random House, 1964), p. 355-361.

The Mainline and other so called low price cars of the Big Three seemed to be "stripped down" versions of the more expensive cars. The market for the Rambler did not make the "encouraging turn" until the spring of 1957.[23]

[23] Ibid., p. 364.

CHAPTER IV

THE EDSEL

I. THE FINAL DECISION

In early 1955, the executive structure of the company had changed. Lewis Crusoe moved from head of the Ford Division to become Executive Vice-President, Car and Truck Divisions; McNamara was made head of Ford Division and F. C. Reith became a member of Crusoe's staff and as such joined the Product Planning Committee.

The Product Planning Committee was now chaired by Crusoe.[1]

The automobile industry was in a state of optimism according to Automotive News:

> At the moment, Detroit is in the middle of a boom, the public has bought two million cars in the off peak season from January to April, and now is ..... established to be buying at a 600,000 a month clip. That's a rate of more than 7,000,000 a year.[2]

In this atmosphere, Rieth presented an overall plan for Ford's future. His plan was supported by an outside firm, Lehman

[1]Allan Nevins and Frank Ernest Hill, Ford Decline and Rebirth 1933-1962 (New York: Charles Scribner's Sons, 1963), pp. 380-382.

[2]"Automotive Industry," Automotive News, Vol. 118, No. 7 (May 13, 1955), pp. 26-28.

Brothers; the study pointed out that G. M. held about 50 percent of the market. At G. M., 45 percent of new car registrations are in the medium-price field. At Chrysler, 47 percent are in the medium-price field. At Ford, only 17 percent of the registrations are in the medium-price field. When looked at from this view, 50 percent of G. M.'s volume rests on Chevrolet, while at Ford, 80 percent of volume is generated by the Ford automobile. This means that the success and profitability depends on the Ford Division alone.

The study went on to say that this imbalance shows in the market-place. G. M. has 67 percent of the medium-low-market, Ford 16 percent and Chrysler, 14 percent. In the upper-medium bracket, G. M. has 56 percent, Chrysler, 29 percent and Ford, 3 percent if the Thunderbird in included. The study also concluded that when a company has two or more entries in the medium-price field, the result is to strengthen the sales of all its car lines.[3]

Reith also pointed out that partly because of this gap the company had fewer dealers than G. M. and Chrysler. The time

[3]"Ford vs G. M. New Line Makes It A Car For Car Battle," Business Week, No. 1421 (November 24, 1956), pp. 26-28.

was as "auspicious" as could be imagined. Population was growing, and consumer income was rising.[4]

Reith's proposal was using three basic body shells; one slightly modified to produce seven basic automobiles:

Number 1 for Ford mainline and other standard Fords.

Number 1 (modified) Ford Fairlane and low-priced E car.

Number 2 Mercury and high-priced E car.

Number 3 New Super Mercury, Lincoln.[5]

Reith's basic plan was approved by the Board of Directors apparently as a result of or coincident with Reith's proposal, the following organizational changes took place.

Lincoln-Mercury Division became two divisions; Ben Mills became Vice-President of the company and was named General Manager of the new Lincoln unit.

Reith was made a Vice-President and put in charge of the Mercury unit.

A Special Products Division was formed to develop the E car under R. E. Krafve.

William Clay Ford, at that time Vice-President and in charge of the Continental Division, became group director for that unit and the Lincoln.

[4]Nevins, op. cit., p. 385.

[5]Ibid., p. 387.

Benson Ford, formerly Vice-President and General Manager of Lincoln-Mercury, now became Group Director of the Ford, Lincoln-Mercury, and Special Products Division.[6]

Richard Krafve had been a sales engineer and management consultant before joining Ford in 1947 and was moved to his new position from the Lincoln-Mercury Division.[7]

II. THE DESIGN

The automobile was designed within the basic limitations set by the production policy on body shells. The designer, Roy A. Brown, actually the "stylist" said in an interview:

> Our goal was to create a vehicle which would be unique in the sense that it would be readily recognizable in styling theme from the nineteen other makes on the road at the time. We went to the extent of making photographic studies from some distance of all nineteen of these cars, and it became obvious that at a distance of a few hundred feet the similarity was so great that it was practically impossible to distinguish one make from the others.....They were all peas in a pod. We decided to select a style that would be "new" in the sense that it was unique, and yet at the same time familiar.[8]

The car was presented on August 15, 1955, to the Product Planning Committee, including Henry Ford II and Breech. During

[6]Ibid., p. 388.

[7]"Portraits," Fortune (June, 1955), p. 78.

[8]John Brooks, "The Edsel," The New Yorker, Vol. XXXVI, No. 41 (November 26, 1960), pp. 59-60.

the unveiling ceremony:

> The audience sat in utter silence for what seemed like a full minute, and then, as one man, burst into a round of applause. Nothing of that kind had ever happened at an intra-company first showing at Ford....[9]

In so far as being unique, a novel horse-collar-shaped radiator grill was set vertically in the center of a conventionally low, wide end. The rear end was a departure from the familiar, for instead of the high "tail fins" which were in style at the time, there were wide-spread horizontal wings filled from the rear with 25 inch tail lights, later dubbed gull wings. This innovation was copied by the rest of the industry for the "tail fin" disappeared from other models in 1959-1960.

George Walker, chief stylist for Ford said later, after the Edsel was placed on the Market:

> The front grill is a classic...I liked the "big package look" of the car. You take Lowey's 51 Studebaker, that was swell design, but it wasn't big.[10]

Neil L. Blume, who was the engineer in charge of the Edsel, stated that it was the styling group which was responsible for the transmission control buttons which were placed in the center

[9]John N. Brooks, The Fate of the Edsel and Other Business Adventures (New York: Harper & Row, 1963), pp. 59-60.

[10]Thomas P. Murphy, "How Edsel Lured Those Dealers," Fortune (September, 1957), p. 146.

of the steering column. This problem gave them "a fit" and was not ready until just before production began. Engineering wasn't at all sure it could be done. Blume also said that they tried to build "selling points" into the car. These selling points, "something for the dealers to talk about," consisted of such items as a thermometer that displayed inside and outside temperature, a speedometer which glowed red when it reached a preset speed, push-button operation of the trunk and hood, single control for both heating and cooling, and several other almost nonfunctional items.

On the more functional side, the automobile in the larger series was provided with a 385 horse power engine and in the smaller version, 303 horse power. The engine was equipped with a unique multiple thermostat system that overcame warm-up problems that were typical of the larger engines of that time.[11] The brakes provided were self-adjusting, and an air suspension system was provided for later production models. Blume said, "The automobile was engineered for passing ability, torque and acceleration."[12]

[11]"The New Edsel," Consumer Report, Vol. 23, No. 1 (January, 1958), p. 29.

[12]Murphy, loc. cit.

III. MARKET RESEARCH

"Conventional market research never went into the Edsel. Ford used a type of motivational research called imagery studies."[13] While this departure from standard practice seems unusual, it is probably true, for no source indicates that any other type of research was conducted.

Business Week observed that if the conventional studies had been made, even in 1955, no "chink" in the middle price bracket would have been observed.

This observation is supported by Roy Abernethy who has stated that their decision (American Motors) to enter the compact market in 1956 was carefully calculated, despite the fact that the 1955 market consisted of 38 percent medium and upper-price automobiles.[14] According to Abernethy, the procedure to be used was, to a great degree, responsible for G. M. taking the lead from Ford in the 1930 era:

> General Motors moved to capitalize on the fact that cars could be glamorized and merchandized as symbols of status of their owners...merchandising put heavy emphasis on the symbolism theme.[15]

[13]"Edsel Dies, Ford Regroups and Survives," Business Week (November 28, 1959), p. 27.

[14]Sidney Furst and M. Sherman, Business Decisions That Changed Our Lives (New York: Random House, 1964), p. 355.

[15]Ibid., p. 356.

The Director of Planning for Marketing Research for the Special Products Division was David Wallace. He has stated that in the planning for the Edsel, they followed this line:

> We said to ourselves, lets face it, there is no great difference in basic mechanisms between a two thousand dollar Chevrolet and a six thousand dollar Cadillac. Forget about all the ballyhoo, we said, and you'll see that they are pretty much the same thing. Nevertheless, there's something - there's got to be something in the make up of a certain number of people that gives them a yen for a Cadillac, in spite of its high price, or maybe because of it...we concluded...cars are the means to a sort of dream fulfillment ...some irrational factor in people that makes them want one kind of a car rather than another - something that has to do with...the car's personality.[16]

Wallace has said that he and others at Ford were aware of the research conducted by Pierre D. Martineau (Automobiles: What They Mean To Americans).[17] Martineau was Director of Research and Marketing at the Chicago Tribune and had first presented his work in a lecture at the University of Michigan in 1954. It was also published in another form in the Chicago Tribune and later in the work cited. His study compared, among other things, the Buick to the Ford.

[16]Brooks, op. cit., p. 27.

[17]Pierre D. Martineau, Motivation In Advertising (New York: McGraw-Hill Book Co., Inc., 1957), Chapter 6.

> Buick is seen as the car for successful people moving upward...Ford retains from its tin-lizzie past...which values it...for rugged wear, a plain farm car. It is intensely attractive to youngsters.[18]

These ideas were not new, but certainly they impressed people in Ford at that time. Crusoe has been quoted as saying, "I don't want people to leave my store to buy something better... and stopping for a Buick."[19]

These studies used to measure the ineraction between buyer and product[20] might be interestingly applied to the interaction between producer and product.

Wallace decided to make a full assessment of the "personalities" of all of the medium-price automobiles on the market and some of the lower-price models as well. Columbia University Bureau of Applied Social Research was engaged to interview 800 recent new car buyers in Peoria, Illinois, and 800 in San Bernardino, California. The survey supported the Martineau Studies and assisted in finding the correct personality for the E car.

[18]Ibid., pp. 41-49.

[19]William Marsh, "Edsel And How It Got That Way," Harpers, Vol. 215 (May, 1957), pp. 68-69.

[20]R. Ferber & H. G. Wales, Motivation And Market Behavior (Homewood, Illinois: Richard D. Irwin, Inc., 1958), p. 37.

In early 1956, Wallace proposed the following in a report to the Special Products Division:

> The most advantageous personality for the E car might well be the smart car for the younger executive or professional family on its way up. Smart car: recognition by others of the owner's good style and taste. Younger: appealing to sprited but responsible adventurers. Executive or Professional: Millions pretent to this status, whether they can attain it or not. Family: not exclusively masculine; a wholesome "good" role. On its way up: "The E car has faith in you, son; we'll help you make it!"[21]

The main task for Wallace now was to find a name for the E car. To this end he hired research groups to poll in the streets. He entered into a lengthy correspondence with the poet, Marianne Moore, which was later published in the New Yorker and by Morgan Library.[22] Although the correspondence was charming, it yielded no usable name for the E car. Foote, Cone and Belding were called in and from a list of 6,000 names they finally submitted four: Ranger, Pacer, Corsair, Citation.[23]

These were the proposed names that Krafve took to the Executive Committee. In that meeting, Breech said that he didn't

[21]Brooks, op. cit., p. 32.

[22]Marianne Moore & Wallace David, "Department of Amplification," The New Yorker, Vol. XXXIII No. 8 (April 13, 1957), pp. 140-146.

[23]Brooks, op. cit., p. 35.

care for any of them and named the Edsel. This name was objectionable to the Ford Brothers (not in attendance) but Henry Ford II, when consulted after the meeting said, if it was the committee's desire, he would abide by it. The other four names were assigned to the four models of the car that were produced.[24]

No break down on the full advertising expenditures is available, but some appreciation of its size can be gained. The advertising campaign was under the personal direction of Fairfax M. Cone. The agency established a Detroit office to handle the Edsel account. The office staff consisted of sixty people other than those who came from the home offices.[25]

IV. SELLING

Selling the Edsel with a new dealer organization was generally considered by Ford and the other industry members to be the most risky portion of the operation. The lack of a solid dealer organization was generally considered to be the reason for the Kaiser failure.[26]

[24] Ibid., p. 34.

[25] Ibid., p. 37-72.

[26] "Automotive News," op. cit., p. 36.

The best reason Ford could give for establishing a separate dealer organization instead of "dualing," an industry term referring to one dealer having more than one make, was explained by the Edsel sales manager, J. C. Doyle. It was common knowledge that when dealers dualed and one car had an off year, they would not "push it" and that compounded the sales problem. The dual dealer would push only the good seller, - usually the lower-priced car. G. M. does not dual except in low volume areas and Chrysler has had problems in this field also. Dualing seems to be more expensive in the long run.[27] The only places Edsel would be dualed was in areas that would not support the single car. Edsel needed about 1,200 dealers to open sales.

In May, 1955, Doyle formed a planning group of nine men and began a county by county breakdown of sales areas. The group took each area in the country's 60 major metropolitan market areas and determined population, population over 21, number of families, number of families with an income over $4,000, median value of homes, percent delapidation of homes, and

[27] "How Edsel Lured Those Dealers," op. cit., p. 145.

automobile population. Other factors were considered: location of the income groupings, location of shopping centers, traffic flow, where "the automobile row" was and how vital it was, location of other dealers.[28]

The studies were finished in September, 1956. The total number of dealers required by "introduction day" was 1,184 and the eventual number would be about 3,000.[29]

Five regional sales offices were established (Newark, Chicago, Detroit, New Orleans, San Francisco) with 24 districts and 900 persons were placed as field sales representatives. The marketing group in Detroit grew to 149 by January 1, 1957.[30]

Doyle had some inter-divisional problems when he started lining up dealers, since some of them came from the Ford Division and some from former Lincoln-Mercury dealers. The final grouping contained about 65% "shift over" dealers who left other companies.

Doyle maintained that they were very careful to select only "quality dealers," those with excellent reputations.[31]

[28] Ibid.

[29] "How To Build A Dealer Empire," Business Week (June 22, 1957), p. 61.

[30] Ibid.

[31] Murphy, op. cit., p. 146.

It was generally conceded within the industry that the Edsel dealer system was well established on "introduction day."[32]

V. MANUFACTURING

The Edsel was produced in plants along with Fords and Mercurys. Krafve had asked for plants of his own, but was turned down.[33] Unfortunately, the first Edsels were of poor quality. Automotive News reported that the earliest Edsels suffered from poor paint, infereior sheet metal, and faulty accessories. A former executive of the Edsel Division estimated that only about half of the first Edsels really performed properly.[34]

Krafve's reasons for asking for his own plants were based on the fear that in the Ford and Mercury plants, the Edsel would suffer. He stated that inter-divisional rivalry was intense, but he did not intend to imply that there were any conditions approaching sabotage. Minor problems were to be expected in any new car.[35]

[32] Ibid.

[33] Brooks, op. cit., p. 57.

[34] Ibid.

[35] Ibid., p. 59.

This opinion was shared by Consumer Report:

> The Edsel invites the standard warning against buying cars produced before the assembly lines are running smoothly and before at least some built-in troubles have been rectified. The warning - applicable to any make - was justified once again by C U's Edsel.[36]

This problem in manufacturing is generally conceded to be a standard problem in the automotive industry.

VI. THE OTHER DIVISIONS

Between the time that the Edsel was conceived and the time that the car was introduced, the other divisions at Ford were busy pusing into the middle price market. The reasons for this policy are not clear, although, Business Week claims that the independence of the divisions within Ford was responsible, for after all, "the higher a car's price, the more profit," for any given division.[37]

The situation Ford created looked like this:

1955	1958 Reith Proposal**	1958 Actual
Mean Industry Wholesale Price $1572		$1881
Middle Price Market Start $2100		$2300

[36]"The New Edsel," Consumer Report, Vol. 23 No. 1 (January, 1958), p. 30.

[37]"Edsel Dies, Ford Regroups and Survives," loc. cit.

Below Middle Price

Ford Mainline 6 1606-1753 Ford Customline 6 1801-1845 Ford Fairlane 6 1914-2204 Ford Mainline 8 1706-1853 Ford Customline 8 1901-1945	Ford Mainline Ford Customline Ford Fairlane***	Ford Custom V8 1923-2054 Ford Fairlane V8 2147-2332

Middle Price

F. Thunderbird No Data Ford Fairlane 8 2014-2304 Mer. Custom 2218-2686 Mer. Monterey 2400-2464 Mer. Montclair 2631-2712	F. Thunderbird Ford Fairlane Low Price E Car Mer. Monterey High Price E Car Super Mercury	F. Thunderbird No Data F. Fairlane 500 2289-2907 Edsel Ranger 2300-2466 Edsel Pacer 2499-2771 Mer. Monterey 2422-2822 Mer. Montclair 2966-3284 Edsel Corsair 3066-3139 Edsel Citation 3242-3489 Mer. Parklane 3555-3788

Above Middle Price

Lincoln Custom 3563-3666 Lincoln Capri 3752-4071	Lincoln Custom Lincoln Capri L. Continental	Lincoln Capri 4415-4553 L. Premier 4894-5124 L. Continental 5367-5792

*Automotive Industries, Vol. 118 No. 6 (March, 1958)
**Proposed Prices are not available.
***It is not clear from available sources whether the breakdown was to include 6 cylinder as well as 8 cylinder cars in these models.

The situation on the introduction of the Edsel was completely different from Reith's proposed plan. Additionally, Chevrolet and Plymouth had followed Crusoe's 1955 Fairlane into the middle-price market.

It is no wonder that Fortune's writer, Thomas P. Murphy, questioned the reasoning of Ford on the introduction of the Edsel in September, 1957:

> No one questions consumer loyalty, no one questions broad sales policy. But the basic premise that the middle-price market is expanding is wrong, for to account for 60% of sales, Ford had to use the three high-priced cars of the traditionally low-priced three. Without counting these cars, the field is not expanding.[38]

Interestingly, American Motor's reading of the high point in the middle-price market was 38%.[39]

To reach the desired 200,000 units per year, the Edsel would have to take about 3% of the total market. In September, 1957, predictions were that the dealers would end the model year with the second largest inventory in history.

[38]Murphy, loc. cit.

[39]Furst, op. cit., p. 366.

V. THE END OF THE EDSEL

In general, the Edsel was reported on favorably by the press and periodicals, except Consumer Report, which purchased a Corsair for test purposes. They happened to purchase a car which suffered from the effects of initial production. The delivered car had

> Among other troubles, the wrong axle ratio, loss of water when an expansion plug blew out, a noisy and leaking power steering pump, noisy rear-axle gears and a heater which issued blasts of hot air, whenever engine speed reached 3600 RPM.[40]

The report went on to say that too much effort apparently went into making a piece of novelty merchandise, too little into making a superior vehicle. They rated the car the lowest of the middle-price class.[41] The other magazines who tested the car found little to complain about, but all accused the car of being too noisy and of having little road adhesion. If attacked at all, the car was classed as being just another of Detroit's middle-priced gadgets.

To reach the 200,000 unit goal, the Edsel would have to sell at a rate of between 600 and 700 units per business day. The

[40] "The New Edsel," op. cit., pp. 30-31.

[41] Ibid., p. 32.

first day of sales, 6,500 orders were place.[42] However, for the first 10 days in October, 1957, sales were only 2,751.

The last major advertising attempt was made on Sunday, October 13, 1957, when a television spectacular was put on at a reported cost of 400,000 dollars. This apparently induced no spurt in sales.[43]

On the 27th of November, Edsel's only dealer in Manhattan announced that he was dropping Edsel and taking on American Motor's Rambler.[44]

Edsel finished the year with sales of 26,681. The sales picture across the automobile industry looked grim.

On January 14, 1958, Ford announced that it was consolidating the Mercury, Lincoln and Edsel Divisions under James J. Nance. Only the sales force of the Edsel Division would remain intact. As a result of this consolidation, 6,000 salaried employees were released.[45] The amount of advertising devoted to the Edsel was reduced. Doyle has said that this

[42]Brooks, op. cit., p. 60.

[43]Ibid., p. 62.

[44]Ibid.

[45]"Edsel Dies, Ford Regroups and Survives," loc. cit.

move marked the end of the car. "With that much competition in a division, the Edsel wasn't going anywhere; it became a stepchild."[46]

The 1959 Edsel was offered in only two models and was scaled down in size. The car was eight inches shorter, 500 pounds lighter and horse power had been reduced by 158 horse power. Price was reduced by five to eight hundred dollars. Consumer Report rated it as a "likeable car."

By this time, Rambler had 4.0% of the market and the small imported cars accounted for 8.12% of the market.

1959 sales were 40,779, about the same as De Soto sales, but by now 16% of sales were going to American Motor's Rambler and the foreign cars. A 1960 model was brought out without "horse collar" in mid-October, 1959, a month after the Ford Falcon, but was discontinued in November, when production had slipped to 20 cars per day.[47]

A report had been made to the Executive Committee in January of 1959, recommending dropping the Edsel, but was not approved because of anticipated dealer reaction. Consideration

[46]Brooks, op. cit., p. 64.

[47]Ibid., p. 67.

had been given to marketing a new compact under the Edsel name to preserve the dealers, but it was feared that the name alone would be too much of a handicap.[48]

VI. SUMMARY

The Edsel was simply an unprofitable venture. The automobile was no better or no worse than any other middle-price automobile on the market at the time. Mechanical problems that plagued the first models were apparently anticipated and are part of the hazard in introducing any new product in the automotive industry.

The dealer organization was well planned and established and sales did not suffer because of inadequacy in this area. The car did sell, and rather well, if placed in comparison with other automobiles. Sales for its total life were 109,466, ignoring the 1960 model year. In two years time, it sold twice as well as the "highly profitable Thunderbird" which sold only 53,166 units in the first three years of its life.[49]

The total sales are even more impressive when consideration is given to the fact that 1958 was only a 4.7 million unit year across the industry, as opposed to 6 million in 1957 and 6.1

[48]"Edsel Dies, Ford Regroups and Survives, op. cit., p. 28.

[49]Nevins, op. cit., p. 388.

million in 1959. Motivational Research did not seem to hurt, or help sales. This area is still a matter of controversy, although it is conceded at this time that there is no evidence to support the fact that an effective market policy can be based on this strategy.[50]

The middle-price market was a tight market at the time and was made tighter by the introduction of the other divisions' entries and this probably hurt sales, but the middle-price market was not destroyed by the small car. Ford apparently had good reason to enter the market, based on their economic forecasts which were largely correct, if on the low side. There is little reason to believe that Ford executives were rash enough to believe they had reached the projected "millennium" in 1955. Total registrations were 52.1 million in 1955 and their report predicted only 70 million by 1965, a relatively steady growth rate.

In consideration of the "Light Car" there is sufficient evidence to indicate that this alternative was unattractive both from a profitability stand and from the standpoint of the

[50] J. A. Howard, Marketing: Executive and Buyer Behavior (New York & London: Columbia University Press, 1943), pp. 93-94.

corporation's objectives of "dominating" the industry. It is also possible to generalize that bounded by industry standards, they could not conceptualize a light car as being any more than a stripped-down version of a higher priced car, and as such non-salable.

Quite simply, the economic production level was 200,000 units and it was not achieved. How much lower the economic production level would have been under the alternative plans proposed, or if these alternative plans could have met the objective of gaining more of the middle-price market is partly a matter of speculation. It can be said, however, that under any of the other plans, the level would have been lower. The enormity of the 200,000 unit level can be appreciated by comparing industry figures. This volume in the peak industry sales year of 1955 (also the decision year) represented more than the total of all Chrylser and Imperial sales which were 156,518 combined; alternatively, it represented one third of the total Buick sales. In 1956, the planning year, 2000, 000 units represented about one half of Buick sales and was approximately equal to combined Chrysler and De Soto sales.[51] The production

[51]See Table III in Appendix.

decision was remarkably high, yet required to support the organization established.

Business Week summarized the situation. Within four years time, Ford expanded to include the following automobile divisions: Ford, Lincoln, Mercury, Edsel, Continental, then closed them because sales weren't sufficient to carry the overhead. In January, 1959, the Mercury-Lincoln and Edsel Divisions were combined and 6,000 salaried employees were released. Upon consolidating production and leaving the Lincoln-Mercury Division (after Edsel was dropped in November, 1959) as a sales division only an additional 600 salaried employees were dropped.

An additional casualty of the four year expansion was the Continental Division. In regard to the demise of this division, an unidentified Ford executive was reported as arguing that the "prestige" of the Continental was worth the losses incurred.[52]

[52]"Edsel Dies, Ford Regroups and Survives," op. cit., p. 28.

CHAPTER V

CONCLUSIONS

The Edsel case was presented as a test to confirm or deny Williamson's hypothesis. An observation that indicated a failure to respond to expense preference would consititute a contradiction to the utility maximizing hypothesis. An observation that expense preference was displayed would support the hypothesis. Ambiguity is introduced into the test by the fact that under both hypothesis (profit maximization and utility maximization) direction of response to the environment is the same. The difference between the two hypotheses being an unmeasureable, greater-than or less-than term. This term is the term that must be isolated to avoid a *post hoc* fallacy. The behavioral assumptions on which Williamson's hypothesis is based are strong enough that they would seem to support a *ceteris paribus* assumption of validity to supporting evidence.

In consideration of the above limitations on analysis, the conclusion has been reached that the case does not deny the hypothesis and does tend to support it.

The anlaysis is, of course, limited to the staff component since no evidence on emoluments is available. The greater-than term will remain ambiguous, although some appreciation of its

magnitude can be gained. Lag effects over time, and the generalizations necessary in historical review also limit the validity of the conclusion. Historical review entails evaluation of reported phenomena, and the suspicion always exists that if more data were observed the evaluation might change.

I. REVIEW OF THE EVIDENCE

In considering alternatives, the high staff value was chosen in the Edsel decision. This in itself could be supported by the profit maximization assumption, for it may have been required to achieve the objective. The decision, however, is suspect in view of the Davis Committee report. It is less supportable under an assumption of profit maximization when the decision led to the formation of the separate Lincoln and Mercury Divisions. Had the actions occurred sequentially over time, there would be less indication of a positive taste for staff. The decision to return the Continental to production under a separate division is also relevant. There may have been a remote profit value in the production of the automobile but it is difficult to support the staff added on its contribution to profit.

The magnitude and rapidity of contraction of operations also tends to support the expense preference hypothesis. The contraction occurred in January, 1958. The Edsel itself had

only been in production during the year 1957 and put on the market on September fourth. The other divisions formed concurrently with the Edsel had been in operation little more than that. The contraction released 6,000 salaried personnel, this does not include executives or production workers, and yet productivity was higher in 1959 than in 1958. Total sales in 1958 were 1,230,394 units. In 1959 sales were 1,698,814. The contribution to profit of staff in this case is again suspect. The negative shift in demand in 1958 qualifies the last statement.

By extracting data from company and industry reports, the value of the accumulated staff is difficult to support under an assumption that the staff has been accumulated in anticipation of future profits alone. The following years are isolated: 1954 represents the base year in which there is little evidence of staff accumulation, 1957 is the high staff year, and 1959 represents operations after contraction.

Year	Unit Total Sales	Sales $	Net Income As % Sales	Staff Trend	Sales $ Trend
1954	1,706,617	4062.3	6.0	0	Base
1957	1,818,169	5771.3	5.1	+	+40%
1959	1,698,814	5356.9	8.4	-	+31%

*See Table I and III in Appendix. 1954 figures from Nevins.

While these figures are gross, and possibly misleading, (they are from year-end reports; product mix varied over the year; cost data is not available) it is difficult to reconcile a 3.1% increase in net income as a percent of sales between 1957 and 1959 with a lower volume of sales both in unit and dollar terms in 1959. By introducing the assumption of expense preference, it becomes less difficult.

It is reasonable to assume that the adversity encountered in 1958 moved the firm to the profit maximizing position where staff was valued only for its contribution to productivity. The apparent ease of the return to higher profits by organizational shifts alone would appear to indicate an excess accumulation of staff.

A generalization on the shift in price and model offerings by the divisions may be possible. The assumption that higher staff preference requires a higher value of output could explain the deviation from the original Reith proposal. The original plan envisioned only two Mercurys and two Edsels. It would seem that the creation of the separate divisions required the additional models to support their individual profits. This conclusion is only speculative since no evidence could be found on this subject, but it does conform to the Williamson hypothesis.

No observations were made which indicated a failure to respond to expense preference after 1952. Responses, due to the Korean War restrictions, until 1953 were largely restricted by government controls. Prior to 1949, the company's profitability position would restrict opportunities for discretion.

II. IN RELATION TO OTHER MODELS

> Models are abstract representation of reality which help us to perceive significant relations in the real world, to manipulate them, and thereby predict others. They may take any of numerous forms...many are simply representations on paper - like mathematical models. Or, finally, they may be simple sets of relationships that are sketched out in the mind and not formally put down on paper. In no case are models photographic reproductions of reality ....Whether or not one model is better than another depends ....solely on whether it gives better predictions....[1]

The above quotation points out both the strength and weakness of the Williamson models. It is sufficient to say that in general an unambiguous profit term is more amenable to quantification than is a concept of expense preference and utility maximization. Alternatively, the simple profit term is deceiving in some cases because of its limited commitment to human motivation.

[1]Charles Hitch & Roland McKean, The Economics of Defense in the Nuclear Age (Cambridge, Massachusetts: The Rand Corporation, 1960), p. 119.

Conceptualizing a utility function of the Williamson hypothesis may help in perception of significant relationships in the real world. Its appeal is in the attempt to bridge the gap between economics and the behavioral sciences. It's validity is subject to question because of the quantitative ambiguity of its significant terms. The post hoc nature of evidence in its support is also suspect. Its significance may lie only in the insight it allows in examination of situations which from the models of alternative hypothesis may seem pathological.

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APPENDIX

TABLE I

FINANCIAL RECORD OF THE FORD MOTOR COMPANY
AND CONSOLIDATED SUBSIDIARIES
1955-1960

	1960	1959	1958	1957	1956	1955
RESULTS FOR YR. ($ amounts in millions						
Sales	$5237.9	5356.9	4130.3	5771.3	4247.0	5594.0
Income before income taxes	$ 774.7	842.8	182.5	580.6	490.4	985.6
Provisions for income taxes	$ 346.8	391.4	66.3	286.6	242.2	531.4
Net income	$ 427.9	451.4	116.2	294.0	248.2	454.2
As a % of sales	% 8.2	8.4	2.18	5.1	5.3	8.1
Dividends paid	$ 164.6	153.5	130.7	129.6	174.7	89.8
Retained income	$ 263.3	297.9	6.8	163.3	118.6	279.5
Capital expenditures for expansion, modernizations, and replacement of facilities (excluding special tools)	$ 128.2	75.0	328.7	214.0	279.9	151.5
Retirements of property, plant & equipment	$ 40.4	66.2	45.4	50.2	49.8	30.2
Depreciation	$ 164.0	172.9	187.3	177.1	133.5	116.0
Expenditures for sp. tools	$ 160.5	154.8	148.0	218.9	273.5	93.0
Amortization for sp. tools	$ 143.6	188.3	215.9	208.8	128.2	122.9
YEAR END POSITION						
Property, plant & equipment	$2678.4	2574.0	2598.7	2623.3	2335.4	2754.0
Accumulated depreciation	$1162.7	1037.7	925.4	781.0	649.3	561.6
Net property, plant & equip.	$1515.7	1536.3	1673.3	1842.3	1686.1	1192.4

PER SHARE** (In $)						
Net Income	$ 7.80	8.24	2.12	5.40	4.60	8.51
Dividends	$ 3.00	2.80	2.00	2.40	2.40	3.27

**After adjustment to give effect to Jan., 1956 reclassification of stock.

TABLE II

PASSENGER AUTOMOBILES--NUMERS IN MILLIONS

Calendar year	Sold	Total registrations
1955	7.5	52.1
1956	5.9	54.2
1957	6.0	55.9
1958	4.7	56.9
1959	6.1	59.6
1960	6.6	61.6
1961	5.9	63.4

TABLE III

NEW PASSENGER CAR REGISTRATIONS BY MAKE AND NAME

Make	1946 Units	%	1947 Units	%	1948 Units	%
Chrysler	65532	3.61	93871	2.96	105315	3.02
De Soto	54420	2.99	72966	2.30	82454	2.36
Dodge	135488	7.46	209552	6.62	213923	6.13
Plymouth	211800	11.68	313118	9.86	347174	9.94
Total Chr.	467240	25.74	689507	21.77	748866	21.45
Ford	326822	18.01	532646	16.82	486888	13.95
Lincoln	10798	.59	24081	.76	32638	.93
Mercury	61187	3.37	111198	3.51	137512	3.94
Total Fd.	398807	21.97	667925	21.09	657038	18.82
Buick	126322	6.96	246115	7.77	244762	7.01
Cadillac	23666	7.30	53379	1.69	59379	1.70
Chevrolet	329601	18.16	640709	20.23	709609	20.33
Oldsmobile	93094	5.13	180078	5.68	175531	5.03
Pontiac	113109	6.23	206411	6.52	228939	6.56
Total G. M.	685792	37.78	1326629	41.89	1418220	40.63
Frazer	1873	.10	51158	1.62	57994	1.66
Henry J.	- -	- -	- -	- -	- -	- -
Kaiser	3501	.19	55571	1.74	108367	3.10
Total K.F.	166361	4.76	106729	3.37	5374	.29

Crosley	2868	.16	15934	.50	25400	.73
Hudson	72484	3.99	83344	2.63	109497	3.14
Nash	85169	4.69	102808	3.25	104156	2.98
Packard	36435	2.01	47875	1.51	77843	2.23
Studebaker	58051	3.20	102123	3.22	143120	4.10
Willys	2329	.13	23400	.74	21408	.61
Misc.	647	.04	894	.03	2910	.09
Total Inde.	263357	14.51	483107	15.25	650695	18.64

	1949		1950		1951	
Make	Units	%	Units	%	Units	%
Chrysler	130516	2.70	151300	2.39	149435	2.95
DeSoto	103311	2.14	115023	1.82	112643	2.23
Dodge	273530	5.65	300104	4.74	298603	5.90
Plymouth	527915	10.91	547367	8.65	542649	10.72
Total Chr.	1035272	21.40	1113794	17.6	1103330	21.80
Ford	806766	16.67	1166118	18.43	862309	17.04
Lincoln	37691	.78	34318	.54	25816	.51
Mercury	186629	3.68	318217	5.03	233339	4.61
Total Fd.	1031086	21.31	1518653	24.00	1121464	22.16
Buick	372425	7.10	535807	8.47	392285	7.75
Cadillac	80880	.67	101825	1.61	97093	1.92
Chevrolet	1031466	21.32	1420399	22.45	1067042	21.08
Oldsmobile	269351	5.57	372519	5.89	273472	5.40
Pontiac	321033	6.63	440528	6.96	337821	6.68
Total G. M.	2075155	42.89	2871078	45.38	2167713	42.83
Frazer	15827	.33	11884	.19	--	--
Henry J.	--	--	14339	.23	51372	1.02
Kaiser	57995	1.20	85832	1.35	53386	1.03
Total K.F.	73822	1.53	112055	1.77	103658	2.05

Crosley	10175	.21	6896	.11	5304	.10
Hudson	137907	2.85	134219	2.12	96847	1.91
Nash	135328	2.80	175722	2.78	140035	2.77
Packard	97771	2.02	73155	1.16	66999	1.32
Studebaker	199460	4.12	268229	4.24	205514	4.08
Willys	28576	.59	33926	.53	26049	.51
Misc.	1539	.03	2375	.04	3162	.06
Total Inde.	648578	14.15	806577	12.75	543910	10.75

	1952		1953		1954	
Make	Units	%	Units	%	Units	%
Chrysler	113392	2.73	153756	2.68	101741	1.84
DeSoto	91677	2.20	122342	2.13	76739	1.39
Dodge	246464	5.93	288812	5.03	154789	2.80
Plymouth	433134	10.41	660447	10.46	381078	6.87
Total Chr.	884667	21.27	1165357	20.30	714347	12.90
Ford	732481	17.61	1116267	19.45	1400440	25.30
Lincoln	29110	.70	39169	.68	36251	.65
Mercury	185883	4.47	287717	5.02	269926	4.88
Total Fd.	947474	22.78	1443153	25.15	1706617	30.83
Buick	310806	7.47	454320	7.92	513497	9.28
Cadillac	87806	2.11	98612	1.72	110328	1.99
Chevrolet	852542	20.50	1342480	23.39	1417453	25.61
Oldsmobile	218189	5.25	305593	5.32	407150	7.35
Pontiac	266351	6.41	385692	6.72	358167	6.47
Total G. M.	1735694	41.74	2586697	45.07	2806595	50.70

Frazer	--	--	--	--	--	--
Henry J.	30284	.73	11385	.20	--	--
Kaiser	41022	.99	22825	.40	8889	.16
Total K. F.	71306	1.72	34210	.60	8889	.16

*Willys was part of K.F. from 1951 on.

Crosley	2678	.06	--	--	--	--
Hudson	78509	1.89	66797	1.16	35824	.65
Nash	142520	3.43	137507	2.40	82729	1.49
Packard	66346	1.60	71079	1.24	38396	.69
Studebaker	157902	3.80	161257	2.81	95914	1.74
Willys	41016	.99	42433	.74	17002	.31
Misc.	982	.02	3162	.06	2375	.04
Total Inde.	489954	11.79	482235	8.41	272240	4.92

	1955		1956		1957	
Make	Units	%	Units	%	Units	%
Hudson	20522	.29	11822	.29	4596	.07
Nash	37197	.52	25271	.42	9474	.16
Rambler	72227	1.00	70867	1.19	91469	1.53
Total A.M.	129946	1.81	107960	1.81	105539	1.76

Chrysler	144678	2.02	106853	1.79	106436	1.78
DeSoto	118062	1.65	100766	1.69	103915	1.74
Dodge	284323	3.96	220208	3.70	257488	4.30
Imperial	11840	.16	10460	.18	33017	.55
Plymouth	647352	9.03	483756	8.12	595503	9.97
Total Chr.	1206195	16.82	922043	15.48	1096359	18.34

Continental	606	.01	1564	.03	2490	.04
Edsel	--	--	--	--	26681	.45
Ford	1573276	21.94	1375343	23.09	1493617	24.97
Lincoln	35017	.49	42598	.72	34808	.58
Mercury	371837	5.19	274603	4.61	260573	4.35
Total Fd.	1980737	27.63	1694108	28.45	1818169	30.39
Buick	737879	10.29	529370	8.89	394553	6.60
Cadillac	141038	1.97	132952	2.23	141209	2.36
Chevrolet	1640681	22.88	1565399	26.29	1456288	24.34
Oldsmobile	589515	8.22	437896	7.35	371596	6.21
Pontiac	530007	7.39	358668	6.02	319719	5.34
Total G.M.	3639120	50.75	3024286	50.78	2683365	44.85
Packard	52103	.73	28396	.48	5189	.08
Studebaker	95761	1.38	76402	1.28	62565	1.05
Total	147864	2.06	104798	1.76	67754	1.13
Misc.	7582	.11	3866	.07	4329	.07

Make	1958 Units	%	1959 Units	%	1960 Units	%
Hudson	--	--	--	--	--	--
Nash	--	--	--	--	--	--
Rambler	186373	4.00	363372	6.01	422273	6.42
Total A. M.	186373	4.00	363372	6.01	422273	6.42

Chrysler	58573	1.26	64424	1.07	79752	1.21
DeSoto	47894	1.03	42488	.70	23063	.35
Dodge	135538	2.91	167277	2.76	356572	5.42
Imperial	14823	.32	18498	.31	16360	.25
Plymouth	391104	8.40	390104	6.46	445590	6.78
Total Chr.	647932	13.92	682791	11.30	921337	14.01
Comet	- -	- -	- -	- -	157515	2.40
Edsel	38601	.83	40778	.67	- -	- -
Ford	1028893	22.11	1471249	24.35	1420352	21.60
Lincoln & C.	26605	.57	28815	.48	20711	.31
Mercury	136295	2.93	157972	2.62	150724	2.29
Total Fd.	1230394	26.44	1698814	28.12	1749302	26.60
Buick	263981	5.67	245909	4.07	267837	4.07
Cadillac	122651	2.63	135387	2.24	149593	2.27
Chevrolet	1234414	26.53	1419131	23.49	1696925	25.80
Oldsmobile	306566	6.59	360525	5.97	355798	5.41
Pontiac	229831	4.94	382137	6.33	399646	6.08
Total G. M.	2157443	46.36	2543089	42.10	2869799	43.63
Packard	- -	- -	- -	- -	- -	- -
Studebaker	47798	1.03	133382	2.21	106244	1.62
Total	47798	1.03	133382	2.21	106244	1.62
Misc.	6057	.13	5696	.09	8910	.14
Tot. U. S.	4275997	91.88	5427144	89.83	6077865	92.42
T. Foreign	378517	8.12	614131	10.17	498875	7.58